

Thesis  
4103

**HEALTH BELIEFS AND PERSONALITY CORRELATES OF  
BREAST CANCER:  
FROM SCREENING TO MASTECTOMY ADJUSTMENT—  
A CROSS-CULTURAL STUDY BETWEEN SCOTLAND AND GREECE**

*Thesis submitted in part fulfilment of the requirements for the degree of*

**DOCTOR OF PHILOSOPHY**

at

**The Department of Psychology  
University of Stirling**

by

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**December 2003**

## **Abstract of Thesis**

The present thesis consists of three thematic parts in relation to breast cancer: (a) practice of breast self – examination (BSE), (b) screening mammography attendance and (c) adjustment to breast cancer surgery / mastectomy. The aims of the respective studies are (a) to examine attitudes, beliefs and practices regarding BSE in younger (30 years old or under) and older women (over 30 years old), (b) to explore attitudes and beliefs regarding mammography and identify factors associated with screening mammography attendance and (c) to explore factors associated with adjustment to breast cancer surgery. The above aims are explored in two different cultural contexts, by comparing samples from Scotland and Greece. Samples consisted (a) of 205 younger and 258 older women, university staff and students in Scotland and 85 younger women, university students in Greece, (b) 283 women who attended and 72 women who did not attend the National Breast Screening in Scotland, and 72 women undergoing mammography in Greece and (c) 19 women in Scotland and 27 women in Greece, who have undergone surgery for breast cancer. All participants were assessed on a variety of measures. These included demographics, health history, health beliefs and health – related personality variables.

Results indicated that:

1. BSE was predicted by different variables across age and cultural groups.
2. In particular, practice of BSE in younger women was predicted by knowledge about breast cancer, perceived barriers, health motivation and cues for action, whereas practice in older women was predicted by knowledge about BSE, perceived barriers and cues for action.
3. BSE rates in both countries were higher than previously reported but did not differ between women in Scotland and Greece. However, the two groups differed in

knowledge and attitudes, regarding BSE, and in personality. Women in Scotland appeared more knowledgeable regarding BSE, felt less susceptible to breast cancer and were less active in coping with health issues than women in Greece. Women in Greece valued their health more and scored higher in chance health locus of control beliefs than women in Scotland.

4. The best predictor of breast screening mammography attendance in Scotland was knowledge about mammography. Attenders appeared to have more knowledge about breast cancer and about mammography and to focus more on emotional coping, in order to deal with health stresses.
5. The two cultural groups differed in health-related decision making and health – related coping styles. Attenders in Scotland were more knowledgeable about risk factors related to breast cancer and about mammograms and perceived significantly more pain/discomfort associated with the procedure, than attenders in Greece. Attenders in Greece resorted more to acceptance and denial and were more likely to seek emotional support, in order to cope with health stressors than attenders in Scotland.
6. Health beliefs of breast cancer patients, in relation to their condition, and their style of coping with threatening information, concerning their breast problem, are highlighted as important factors to their adjustment in both cultures. However, adjustment to breast cancer surgery appears culture-specific, as different factors seem to determine it in different cultural contexts.
7. Patients in Scotland and Greece did not differ in their overall adjustment. However, Greek patients were significantly less well adjusted sexually post-operatively than patients in Scotland.

Findings are discussed in relation to theoretical and practical implications.

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**«Ἐν οἶδα ὅτι οὐδέν οἶδα»**

**Σωκράτης (δια στόματος Πλάτωνα)**

**«The only I know is that I know nothing»**

**Socrates (as referred by Plato)**

## **Acknowledgements**

I would like to thank all those who contributed, either directly or indirectly, to the completion of the present thesis.

I am very grateful to the European Community, Marie Curie – Training and Mobility of Researchers Programme, who honoured the project by generously funding it.

I would also like to thank my supervisors, Professor Kevin Power and Dr Vivien Swanson for their time and consideration. I am very grateful for all their support and advice. I am also grateful for everything I have learned from them.

I would like to thank the Department of Psychology for all the support and back up they provided all those years for my project. Special thanks to Cathie and Ron, for being a source of honest advice and to all the technicians. I would especially like to thank Bruce for his support and the beautiful discussions we have had, but most of all for his politeness and understanding.

I am deeply grateful to Dr Eileen Holiday from the Ethics Committee in Forth Valley Health Board, Dr Hilary Dobson, clinical director of the Breast Screening Programme in Glasgow and her team of radiographers, breast care nurse, Sister Sheila McNaughton and consultant surgeon Mr Dudley Booth from the Stirling Royal Infirmary and Dr Fiona Johnstone, GP in the medical practice in Bridge of Allan for all their help with data collection.

Special thanks also to Professor Vasiliki Papadioti-Athanasidou from the University of Ioannina, Greece for her constructive advice and contribution to the cross-cultural part of the project, but most of all for being a valuable friend and teacher. I am also grateful to Dr Baso Tzialla-Dafni, physician-rheumatologist, Dr Constantine Tsampoulas, associate professor of radiology in the University of Ioannina, and Dr Christos Tatsis, staff radiologist in Arta General Hospital, for their special contribution to the cross-cultural studies on mammography. Thanks to Dr Emmanuel Kontostolis, consultant breast surgeon, director of Department of Breast Pathology and Surgery, and Sister Antigoni Docume, maiden of the Gynaecological Clinic in the University Hospital of Ioannina, for their contribution to the cross-cultural studies on adjustment to breast cancer surgery/mastectomy. Without them the cross-cultural part of this thesis would have not been feasible.

Special thanks to my parents, Dimitris and Voula, and to my brother Aristotelis for helping me to pursue my dreams and believing in me.

I cannot forget to thank my teachers through the years. Especially my first teacher, Mrs Vasiliki Papagianni, and my Greek Language teachers, Mr Anastasios Bigos and Mr Thoukydedis Papageorgiou. They have been model teachers and an inspiration for me in my teaching role.

Last but not least, I would like to thank Dr Thanos Karatzias, my partner for life. This PhD is dedicated to him. It is the story of us, the story of our relationship and our beginnings. Words are not enough to express how I feel about Thanos, about his unconditional love, his rock solid support, his tenderness, his unshakable belief in me, his patience, his honesty, his strenght of character, his clear and brilliant mind, his scientific integrity. The list has no end. Thanos is my soul mate, my other half and I have been blessed that he loves me. His love gives meaning to everything and puts everything into perspective. I would like to thank him from the bottom of my heart for loving the real me, for knowing the real me, even when I am myself confused, and for seeing in me the person I can become. My wish and hope for the future is for us to go on fulfilling our common dreams, both personally and professionally.

I would like to finish by thanking all the participants to the project. I am grateful to them for taking the time and consideration to complete my questionnaires and for sharing their emotions and beliefs with me. I believe I have done my best to honour their trust and use the information they provided me with to the best of my ability.

I should not forget to thank Scotland and its wonderful people, for welcoming me and for sharing their culture with me. Scotland is and will always be my home and its people my people.

This PhD might not be considered a great contribution to science, but it is, I believe, the product of years of hard work and devotion. I have put my zest, motivation and energy to it. The journey has been long and I still do not know what is ahead of me. I sincerely hope that I have learned the lessons I should have and use this experience wisely in the future.

## **Preface of Chapters**

The present thesis entails an investigation of research questions concerning three large areas of breast cancer. In specific, the present thesis examines (a) adherence to breast self – examination (BSE), (b) screening mammography attendance and (c) adjustment to breast cancer surgery / mastectomy. The exclusion method is used to examine the association of a number of factors, examined by previous studies, with each of the above thematic parts / behaviours and determine their predictive value. Additionally, a cultural dimension is introduced in the examination of the above areas, by providing cross-cultural comparisons between two countries with different health and breast care systems, Scotland and Greece.

The current thesis is divided into four parts and eight chapters.

Part A includes three chapters (chapters 1, 2 and 3), which provide a review of the literature for breast self – examination, screening mammography and breast cancer surgery / mastectomy respectively.

Part B consists of one chapter (chapter 4), which outlines the structure, general theoretical framework and selection of variables, method, ethical considerations and data analysis plan.

Part C consists of three result chapters (chapters 5, 6 and 7), which present the research studies, conducted on breast self – examination practice, screening mammography attendance and breast cancer/mastectomy adjustment respectively.

Chapter 5 is structured around two dimensions: age and culture. Practice of BSE and the association between BSE and a number of factors, i.e. demographics/health history, knowledge, health beliefs and health – related personality, is examined (a) between younger (aged  $\leq 30$ ) and older (aged  $> 30$ ) women in Scotland and (b) between younger women in Scotland and Greece.



Chapter 6 entails (a) a comparison between women who attended and women who did not attend the Scottish Breast Screening Programme, in terms of knowledge, health beliefs and personality, (b) an investigation of factors associated with breast screening attendance in Scotland and (b) a cross-cultural comparison between women, who underwent mammography in Scotland, and women, who underwent mammography in Greece, in terms of knowledge, health beliefs and health – related personality.

Chapter 7 entails an investigation of factors associated with adjustment to breast cancer surgery / mastectomy in Scotland and Greece. The factors examined are mastectomy-related health beliefs, coping with illness-related information styles, perceived social support and illness indicators.

Finally, in Part D, chapter 8 summarises the findings of the research studies on BSE, screening mammography and breast cancer surgery/mastectomy (chapters 5, 6 and 7).

A discussion of the theoretical and clinical implications is also included.

**Part A – Literature Reviews Regarding Breast Self – Examination (BSE),  
Screening Mammography and Breast Cancer Surgery/Mastectomy**

## **PART A: Literature Reviews**

### **Method of Literature Searching**

#### **Scope and Aims of the Reviews**

The scope of the three literature reviews included in the present thesis (chapters 1 to 3) was to identify, critically evaluate, collate and present previous literature on the three thematic parts, i.e. breast self – examination (BSE) practice, screening – mammography attendance and adjustment to breast cancer.

The aims of the reviews could be summarised as follows:

- To identify strengths and weaknesses of previous research.
- To summarise previous evidence and identify issues partially or inadequately tackled by previous research.
- To generate and formulate research questions, which are investigated in each of the result chapters (chapters 4 to 6).
- To identify gaps of previous relevant studies and enable methodological decisions in the present research to address these gaps.

#### **Searching Strategy**

A number of strategies were used to identify documents. Data sources included electronic databases and reference list searching. The electronic database searches were conducted in PsycINFO (PsycLIT) and Medline (PubMed). The last update search was on May 2003. For each thematic part, the keyword was firstly entered (i.e. breast self – examination, breast screening, mastectomy). Secondly, additional search terms were combined with each keyword. Keywords and additional search terms by part are summarised in Table 1 below.

**Table 1. Searching Keywords**

<b>Keywords used</b>		
<b>Breast Self - Examination</b>	<b>Screening Mammography / Breast Screening</b>	<b>Breast Cancer Surgery / Mastectomy</b>
<i>Additional search terms</i>		
Adherence, compliance, practice	Health history, family history	Psychological effects / psychosocial effects
Demographics	Health state / use of health services	Adjustment, demographics, illness indicators, medical / illness indicators, personality, coping, social support
History of health disease, health status, health history, family history	Knowledge	Information, decision making
Health beliefs	Health beliefs	Attitudes, beliefs, concerns / worries / fears
Knowledge	Personality, decision making, locus of control, coping	Breast cancer treatments (chemotherapy, radiotherapy / radiation therapy, hormonal treatment, side effects)
Personality, health locus of control, affectivity, affect, emotion, coping	Attendance	
Young, adolescent	Information seeking	
Early detection, effectiveness, risks, trials, advantages / disadvantages	Early detection, effectiveness, risks, trials, alternative methods	
Breast cancer (risk factors, statistics, epidemiology)		

Inclusion criteria were:

1. Primary research, reviews / overviews, meta-analyses or other documents, such as critiques, editorials and commentaries. In some cases, due to accessibility constraints, abstracts were considered, on the condition that they were detailed and explicit enough.
2. Publication date (research articles published in 1970 or after)
3. Language of publication (English or Greek)

4. Relevance to each thematic part (i.e. BSE practice, screening mammography attendance and adjustment to breast cancer surgery) and the research questions of interest.

The reference lists of reviews, overviews and critiques, retrieved and finally included in the reviews, were also scanned and additional references were retrieved and reviewed. Criteria for retrieving references from reference lists were relevance to the topic of interest and accessibility.

Web – sites of health authorities (e.g. National Breast Screening Programme) and leading cancer charities / health organisations in the UK (e.g. Cancer research UK) and Greece (i.e. Hellenic Anti - Cancer Institute) were also searched for information, regarding guidelines, epidemiology and statistics.

A number of official reports from health authorities have also been used (e.g. USERS' VIEWS: A Report of the Second Survey of Women's Views of the Scottish Breast Screening Programme 1993 and The State of Women's Health in the European Community, 1997).

Five hundred and thirteen references in total were considered appropriate for inclusion in the three parts of the present thesis, as illustrated in Table 2.

**Table 2. Published Literature Retrieved and Reviewed by Thematic Part**

Thematic Parts	PsycINFO	PsycINFO	PubMed	PubMed	Other Sources (except from databases)		Total Reviewed
	Retrieved	Reviewed	Retrieved	Reviewed	Reference lists Reviewed	Reports & Websites	
BSE	316	56	1,144	49	14	7	126
Screening Mammography	154	68	1,060	96	13	6	183
Breast Cancer Surgery / Mastectomy	2,225	79	126,360	86	38	1	204
All Parts	2,695	203	128,564	231	65	14	513

## **Structure, Organisation and Presentation of Literature Reviews**

Information in the review chapters and their subparts is organised on the basis of the research questions of the corresponding results chapters in the present thesis. Such organisation of the information enabled a systematic presentation of previous evidence for each part and comparison between previous and present results.

It may be important to note that a few studies are cited more than once in the subparts of the same review. This is because these studies cover more than one area of interest.

Nevertheless, only findings related to the specific area of interested are presented in each subpart, whereas their methodology is presented only once (i.e. at the very first citation in the review or in a table). In that way repetition of information throughout literature review parts is avoided.

## **Chapter 1: Literature Review for Breast Self – Examination (BSE)**

### **1.1. Introduction**

Adherence to health recommendations is widely researched. It has been suggested that failure to comply with recommended health-care behaviours is a major contributor to death and disability (Belloc, 1973; Stachnik, 1980). In addition, non-adherence rates are often extremely high, particularly for discretionary preventive and diagnostic behaviours, such as smoking cessation, taking up exercise, performing monthly BSE and attending for mammography (Masur, 1981; Ley, 1982). The following review summarises relevant research on BSE adherence and factors associated with it.

### **1.2. Breast Cancer Statistics**

Cancer is a major cause of death in the UK with more than 263,000 new cases every year. The lifetime risk of developing cancer is more than 1 in 3. In 2000 there were 151,000 deaths from cancer, 22% of these were from lung and 26% from colorectal, breast and prostate cancer. Breast, lung, large bowel (colorectal) and prostate cancer account for over half of all new cases (<http://www.cancerresearchuk.org: Cancer/Statistics, 2003, page updated 21/10/2002>).

Breast cancer is the most common cancer in women worldwide, accounting for about 25% of all female malignancies. The proportion is higher in western countries. It is suggested that incidence has been rising in many parts of the world, including the USA, Canada, Europe, the Nordic countries, Singapore and Japan. Over one million new cases occur each year worldwide (<http://www.cancerscreening.nhs.uk/ Breast Cancer, 2003>).

Breast cancer accounts for 21% of all female cancer deaths in the European Community. In 1997 the average mortality rate for women in the EC was 31.25 deaths

per 100,000 (a 16% decline since 1970) irrespective to age. For women under 65 years the mortality rate was 19.80 deaths per 100,000 (a fall of 9.27%, since 1970) (The state of women's health in the European Community, 1997).

Breast cancer is by far the most common cancer in women in the UK, accounting for 30% of all new cancer cases. Colorectal (13%) and lung cancer (11%) are respectively the second and third most common cancers in women. This is not the case when mortality is concerned. Since 2000, lung cancer has become the leading cause of cancer death in women in the UK, accounting for 18% of all cancer deaths. Breast cancer is the second (17%) followed by colorectal cancer (10%). Breast cancer mortality has fallen dramatically in the last 9 years. It has been claimed that changes are due to early detection and improved treatment (<http://www.cancerresearchuk.org:> Cancer/Statistics, 2003, page updated 21/10/2002). According to Cancer Research UK, 9 out of 10 breast lumps discovered in the UK turn out to be benign (<http://www.cancerhelp.org.uk/help/default:> Cancer Research UK, Breast Cancer Symptoms, Last updated 2002).

According to the Scottish NHS official webpage, breast cancer is the most commonly occurring cancer amongst women in Scotland. Over the period 1989 to 1998 incidence increased by 15.3% with 3,570 new cases in 1998. At the end of 1998 there were 27,224 women living with breast cancer in Scotland, which equates to 1.03% of the population. Of all females living with breast cancer in Scotland, 49.2% were aged 65 or over (<http://www.show.scot.nhs.uk:> Cancer/Facts and Figures, 2003, last updated 29/10/2002).



### **1.3. Breast Self – Examination (BSE): Definition and Guidelines**

The European Code against Cancer incorporates regular BSE for all women among its recommendations for cancer prevention. Nevertheless, BSE guidelines vary across countries in Europe. In some countries BSE is recommended to all women (e.g. Greece, Germany, and Sweden), in some only to women over specified ages (e.g. over 30 in Norway) and in others only to women who have had breast cancer (Denmark) (Wardle et al., 1995). However in those European countries, where BSE is recommended by health authorities, the recommended frequency is “once a month”.

In the UK, the terms “breast awareness” and “breast self- examination” are used interchangeably both by health authorities and influential cancer charities. Breast awareness is a more broad term and it incorporates: BSE (regular examining of the appearance and feel of one’s breasts), getting familiar of what is “normal” for each woman as part of general body awareness and breast care (screening for women over 50). In the present thesis, by BSE we mean a monthly examination of the breasts’ appearance and feel just after monthly menstrual period for both younger and older adult women.

In Greece, monthly BSE is recommended for women of all ages by the Hellenic Anti-cancer Institute (2000). It is though clearly stated that BSE is “absolutely necessary” for women after 30 years of age. In its instructions, the Institute clearly recommends that waterproof BSE instruction cards should be utilised by women over 35 years old. These are cards illustrating the recommended BSE steps. They are especially made waterproof, so that they can be put up in the shower, to act as a reminder for regular breast checks when having a shower. On the other hand, in the two most popular leaflets produced by the Institute in relation to breast cancer, titled “BREAST AND HEALTH” and “For you Madam: THESE SIMPLE TIPS CAN SAVE A LIFE”, no

age limit is stated. “Periodic mammography” is recommended for women, “especially after the age of 50”. In the latter, it is recommended that BSE should be performed once a month, 5-6 days after menstruation.

#### **1.4. BSE: Advantages**

The purpose of BSE is considered twofold: to increase breast awareness and detect any abnormalities. It increases breast awareness by making the women familiar with both the appearance and feel of their breast, so they can know what is “normal” for them and detect easily anything unusual (Friedman et al., 1994).

It has many advantages, which recommend it over other, more sophisticated, techniques (Manfredi et al., 1977; Meyerowitz & Chaiken, 1987; Salazarr, 1994):

- It is relatively simple to teach and easy to learn. According to recent evidence, a new breast examination method, known as the “MammaCare” method, created by the behavioural psychologists Pennypacker and Goldstein and a team of biochemical engineers and technicians, can train women to detect very delicate differences between potentially cancerous or malignant breast lumps and natural fibrous tissue in the breast (Murray, 1998). According to Fletcher et al. (1990), MammaCare – trained women detected more lumps than women trained in the simple circular technique.
- BSE is a skill that does not decay over time and is not affected by individual differences in breast anatomy, e.g. size, volume (Hall, et al., 1980).
- Moreover, it has been argued that its sensitivity improves with regular use, as the practiser becomes more skilful and familiar with the “normal” feel of her breast tissue and structure and thus, more sensitive to possible abnormalities
- BSE requires a minimum time commitment (5-10 minutes) and effort.

- BSE does not require any special equipment and can be performed at one's comfort at home without the presence of specialised medical staff (Salazar, 1994; Friedman et al., 1994)
- It is also a low-cost, non- invasive, non- painful screening method.
- BSE is also very important for detecting, monitoring and diagnosing numerous benign breast diseases.
- For all the above reasons, BSE is highly recommended in cases, where massive screening procedures are not feasible (Patistea et al., 1992).

### **1.5. BSE Adherence Rates**

Despite the importance of BSE, there has been a consensus in the literature to date that adherence is limited. Wardle et al. (1995) collected data about BSE practice from 9,181 women from 20 European countries, the UK included, and concluded that more than half of the women assessed (54%) had never performed BSE in their life and only 8% performed it monthly, while 36% presented with an occasional practice. There is though no agreement across the literature about the exact adherence rates amongst the female population.

Hallal (1982), in a study conducted in the USA, has reported that 25% of 207 women aged 18 or over practised BSE according to the recommendations. Similar percentages (27%) have been presented by Budden et al. (1995) in a sample of 65, 17 to 45 year old, nursing university students in Australia, and by Murray and McMillan (1993) (28.1%), in a sample of 400 women over 16 years old in Northern Ireland. Smaller percentages (17%) have been reported by Nemcek (1990) and Alagna and Reddy (1984). According to Nemcek (1990), from a sample of 300 black women employed in a public hospital in the USA, 17% reported monthly BSE practice.

Similarly, according to Alagna and Reddy (1984), 14% of 73 USA women, aged 18 to 73, practised monthly within a 6-month period.

Published data on frequency of BSE in Greece have been limited. Existing studies have suggested low uptake both in the general population and among health professionals. In specific, Kavga-Paltoglou (1990) looked at BSE practice of a predominantly urban sample of 496 women in Greece, aged 17 to 72 years. She claimed that 48% said they had practised BSE, whereas only 1.4% practised at the recommended timing and frequency. Patistea and colleagues (1992) examined frequency of BSE in 268 Greek health professionals in primary care. Frequency of practice was found low for a professional sample, with only 34.7% claiming to have practised on a monthly basis.

There have also been studies reporting high rates of recommended practice of BSE as well. In Ronis and Harel (1989), in a sample of 619 Detroit women, aged 21 or older, 32% conducted three or more breast self – examinations in the last three months. Wyper (1990), in her study of 202 women, aged 18 or over, conducted in the USA, reported that 45% performed BSE at least once a month. Wellisch et al. (1991) assessed BSE practice in 60 daughters of mothers with breast cancer and 60 controls without any maternal history of breast cancer, aged 18 to 65, and concluded that 41% of those with maternal history and 36% of those without a maternal history reported monthly or bimonthly practice of BSE.

Inconsistencies in reported adherence to recommended frequency of BSE could be attributed to the following:

Firstly, different methodology used for obtaining frequency and proficiency data across studies. To assess frequency, different methods of self- report were used, i.e. questionnaires (e.g. Hill & Shugg, 1989; Wyper, 1990) and interviews (e.g. Calnan &

Rutter, 1986; Calnan & Moss, 1984). Assessment of proficiency / quality of technique was mainly obtained with the use of self – administered questionnaires or interview in the vast majority of studies. A few studies have used demonstration on a non – human (e.g. silicon) model, as in Wood (1994), or on the participants themselves at the presence of a trained observer (Kenney et al., 1988).

Secondly, limited data on timing and quality of technique. Only a proportion of previous studies reported data both on frequency and performance (e.g. Stillman, 1977; Alagna & Reddy, 1984; Calnan & Moss, 1984; Calnan & Rutter, 1986; Friedman et al., 1994; Beckett et al., 1990; Champion, 1992; Coe et al., 1999). Nevertheless, those studies, which report such data, assessed different aspects of proficiency, for example response to a checklist of steps (e.g. looking breasts in the mirror, feeling them in the shower) (Friedman et al., 1994; Baker, 1988) or performance in a set of behaviours (e.g. position during exam, parts of hand used, type of movement, amount of pressure, number of fingers used, use of contralateral arm or not) (Shepperd et al., 1990; Coe et al., 1999). Also, very few studies have considered correct timing of BSE in relation to the menstrual cycle (Stillman, 1977; Becket et al., 1990).

Thirdly, variability in time intervals for the assessment of frequency and the questions assessing BSE practice was evident across studies (see Table 1.1.). BSE practice has been assessed in a 3-month interval prior to assessment (e.g. Ronis & Harel, 1989), in a 6-month interval prior to assessment (e.g. Shepperd et al., 1990) or in the past year (e.g. Friedman et al., 1994; Patistea et al., 1992). In some cases participants were simply asked whether they had ever performed BSE (e.g. Wellisch et al., 1991) or how often they perform a self - examination without specifying a time frame. (e.g. Calnan & Rutter, 1986; Kavga-Paltoglou, 1990) Only a few studies assessed BSE

practice within more than one - time intervals. Champion (1992), for example, obtained information on participants' practice in the past year, the past 3 months and the past month (e.g. Alagna & Reddy, 1984; Ronis & Harel, 1989).

Different definitions of BSE practice have been employed across studies and use of different criteria to distinguish practice from non-practice. In most studies "once a month" was defined as the recommended frequency of BSE. However, some researchers simply distinguished "practisers" and "non-practisers", according to whether they had ever performed BSE or not (e.g. Wellisch et al., 1991). In Murray and McMillan (1993) those women who did not reply to the question about BSE frequency were simply assumed not to practise BSE and were classified as non-practisers. Coe and colleagues (1999) defined "performers" as those, who had practised once or more in a month, and "non-performers" as those, who had not practised within a month interval.

Diversity also existed in sample characteristics (e.g. age group, nationality, and socio-economic status) as well as variability in sampling procedures across studies (see Table 1.1.). Some researchers investigated BSE practices among minority groups, e.g. black women (Manfredi et al., 1977; Nemcek, 1990) and focused on women of lower income and lower education (Shepperd et al., 1990). Millar and Millar (1992) compared BSE practice in different age groups (i.e. 20-29, 30-39, 40 or over), whilst Baker (1988) focused only on women aged 60 and older. Different studies have recruited their participants from different organisations (e.g. hospitals / health centres, universities), clubs or groups (e.g. Hallal, 1982; Routledge, 1987; Champion, 1984; Friedman et al., 1994; Staruss et al., 1987; Salazar & Carter, 1994; Wyper, 1990).

Finally there is a distinctive lack of UK and European research. Most of the studies on BSE practice rates and adherence have been performed in the USA. Very few studies

have provided information on BSE behaviours in British or partly British samples (see Table 1.1). In addition, guidelines specifically about BSE and breast care in general usually vary from country to country, even between European countries, and change over time, hindering comparability and generalisation of results.

**Table 1.1. Studies providing BSE Adherence / Practice Rates on British / Partly British Samples**

Reference	Sample Size and Composition	Time Interval of BSE frequency and Performance (if examined)	Rates reported
Calnan & Rutter (1986)	277 British women, aged 45-64, registered with a GP	How frequently do you examine your breasts? Never/Less than once a year Once a year < 1 Monthly Once a Month (=recommended frequency) < once a week Once a week < Once a day Technique (recommended steps)	7%: Never 3%: More than 6 Monthly 0%: 6 Monthly 38%: Less than 1 Month 31%: Monthly (=recommended frequency) 21%: Less than Monthly
Pitts et al. (1991)	176 British (mean age=22.3) & 125 Zimbabwean (mean age=22) undergraduate university social science students	Do you practice BSE? Regularly (=once a month) Occasionally Rarely Never Performance of BSE	Half of British participants reported occasional practice and a fifth practised once every month. 36% of Zimbabwean participants had never heard of BSE and only 6% practised regularly.
Murray & McMillan (1993)	400 women from Northern Ireland, aged 16 or over, registered in the Rating Valuation List for Northern Ireland	If you examine your breasts to check for lumps about how often do you do this? Once a month (=regular practice) Once every 3 months Once every 6 months < every 6 months Non-practice was implied to no answer to the above question.	72.9% practised BSE  28.1% at least once a month 15.3% every 3 months 12.5% every 6 months 16.9% less than every 6 months
Wardle et al. (1995)	16,486 female university students from 20 European countries (BSE frequency and practice reported by 9,181), aged 17-30	Do you know how to examine your breasts? For lumps? Yes/No If "Yes" How often do you examine your breasts? (in a year) (Regular practice = 10 or more times in a year)	Overall results: 54% never practised BSE 8% regular BSE 36% occasional BSE. Significant differences between countries, ranging from 6% to 15% reporting regular BSE.



## **1.6. Breast Cancer and Effectiveness of Early Detection: The case of BSE - Disadvantages**

Having presented evidence on the advantages of BSE as breast care behaviour and on adherence rates, it is worth discussing previous evidence on the effectiveness of BSE as a method of early detection of breast cancer and alleged disadvantages of BSE.

Although use of chemo - prevention for women at high risk of breast cancer is currently being investigated (Cuzick & International Breast Cancer Investigation Study – IBIS, 2001; Cuzick et al., 2002), no definite methods of primary prevention of breast cancer are widely available as yet. Control relies on secondary prevention, which aims at suppression of clinically occult disease, mammographic screening, and early detection of palpable disease through physical examination and breast self – examination (Harper & Enlisbe, 1993). The stage at which breast cancer is diagnosed greatly influences survival chances. In general, the earlier the detection, the greater the chance of survival (<http://www.cancerscreening.nhs.uk>: Breast Cancer, 2003).

BSE and mammography are the only available methods to date for early detection of both breast cancer and benign breast disease (Salazar, 1994).

It is suggested that breast cancer mortality is declining in western countries (e.g. USA, Canada, Germany, Austria and the UK), whilst survival rates are improving (Mettlin, 1999). Some of the decline in mortality has been attributed to increased utilisation of mammographic screening and early detection, as suggested by relevant research. The British Association of Surgical Oncologists (BASO) carried out an audit of breast cancers detected by screening between 1992 and 1996. They found that the national survival rate at five years was 93% (BASO, 2000, in <http://www.cancerscreening.nhs.uk>: Breast Cancer, 2003). Groenendijk et al (2002) conducted a retrospective study of 102 patients treated for non-palpable breast cancer

between 1980 and 1993 in the Netherlands. Most cancers were screen-detected. At the time of assessment, the majority of patients (75 out of 102) were free of lymph node metastases. Most patients had invasive ductal cancer, but only two patients had died of breast cancer. A 10-year disease-free survival rate was calculated. T1a, T1b and T1c patients had a 10-year survival of 100%, 96% and 96% respectively. The findings suggest that early detection and multimodality of treatment of breast cancer could significantly improve survival.

Nevertheless, observed changes in mortality and survival rates might be attributed to a number of other factors apart from early detection. These factors may be improved treatment and better quality of care, genetics, diet, hormonal exposure, socio-economic, political and cultural factors, like large-scale migrations (Metzlin, 1999). The above debate regarding the effectiveness of methods of early detection, and especially BSE, in reducing breast cancer mortality rates has been investigated by a number of studies. Moss et al. (1994) conducted a non-randomised trial, to investigate the contribution of different factors to previously observed reduction in mortality rates in the UK. The survival of patients with breast cancer diagnosed in different centres and by different methods, i.e. annual mammography and BSE education, was examined. Women aged 45-64 in two districts were offered annual screening for seven years, women in further two districts were offered education about breast self-examination. Results were controlled for tumour size, dissemination status and use of adjuvant treatment. It was found that patients with breast cancer who were non-attenders for screening had poorer prognosis than those in the comparison groups. Patients whose cancer was detected by mammography presented with the best survival rate. However, tumour size and dissemination status, key indicators in early detection, explained only about one third of the improved prognosis in mammography

- detected cancers. Although this was a large study covering a broad geographical area, it was not a randomised trial and use of prognostic factors to predict survival might have been inadequate. The findings of the Moss and colleagues trial regarding BSE were not very positive either. Women who attended the education programmes had shown no reduction in mortality rates over the 10 years following the education programme. The mortality rate was low in one of the two centres, whilst in the other was higher than in all four centres. It is important to note that data on actual BSE practice (frequency and competency) of the participants as a result to the training were not reported in this study. Failure of the intervention to influence mortality rates might have also been due to practice effect.

Apart from the Moss and colleagues, more than 30 other non-randomised studies, predominantly non-UK based, produced conflicting results as to the effectiveness of BSE in preventing deaths from breast cancer. The Russian study (Semiglazov et al., 1992) and the Shanghai trial (Thomas et al., 2002), to mention two of the most frequently cited, confirmed preliminary findings about the effectiveness and usefulness of systematic monthly breast self exam for early detection of breast lumps. However, BSE did not seem to make any difference in the number of breast cancer deaths or in the tumour size and stage of the disease. In fact, there was an increase in the number of biopsies and diagnoses of benign lesions in women who practised regularly than in those who did not (Thomas et al., 2002). A large study, carried out in 30 hospitals in Southern Europe, Italy, examined whether BSE leads to early diagnosis and whether this translates into a larger utilisation of conservative surgical procedures (Interdisciplinary Group for Cancer Care Evaluation, 1991). Participants were 1,315 newly - diagnosed breast cancer patients. Overall, 39% of patients (n = 511) reported some pre-diagnostic BSE practice, but only 8% (n = 109) had practised

regularly and followed the recommended procedure. Self – examiners were found to have a significantly greater chance of being diagnosed with a primary tumour. This positive effect was stronger in the subgroup of optimal performers. However, nearly half of patients (319/655) eligible for conservative surgery still had an unnecessary radical procedure. In this study pre-morbid BSE was shown to have a modest effect on the extent of disease at diagnosis. Nevertheless, this was a retrospective, possibly suffering from the bias of utilising self-reported data. In addition, participants were breast cancer patients at the time of assessment, which might suggest an additional social desirability bias and possibly an adverse effect of illness-related distress on self-report. Moderate effectiveness of BSE might also be due to the low rate of optimal performance (frequency and procedure).

Other disadvantages of BSE, as suggested by previous research, include:

- BSE can increase false positives and subsequent exposure to unnecessary invasive medical investigations with associated morbidity and scarring (Frank & Mai, 1985).
- It can increase anxiety because of the possibility of finding something suspicious or because of benign lesions discovered (Austoker, 2003).
- Relying too much on BSE could offer false reassurance and false negatives, if not performed correctly (Kegeles, 1985). Women themselves might miss an early cancer, which would have been picked using more professional methods, such as mammography and clinical breast examination.
- It can increase the risk of delay in reporting breast symptoms – possibly malignant, especially in women who have experienced one or more benign diagnoses in the past (Austoker, 2003).
- It can lead to obsessional or ritual practice of self – examination (Maguire, 1983).

- Inconsistency in suggested techniques and complicated guidelines can lead to confusion and avoidance (Baines, 1988).

Despite the above evidence, BSE, even in a less rigid and set form, is still highly important. Brett and Austoker (1999) claimed that “being breast aware” and reporting any unusual changes to the general practitioner promptly couldn’t be overemphasised. In addition, BSE – related health campaigns are of value, because they can improve awareness and lead to earlier presentation and earlier diagnosis by changing attitudes and beliefs regarding breast care and breast cancer (Baum, 2002).

### **1.7. Factors associated with Adherence to BSE**

To investigate and consequently encourage adherence with BSE recommendations a number of factors have been examined by previous research as possible contributors to BSE practice / non- practice, i.e. demographic characteristics, personal and family history, health beliefs, knowledge and personality variables. A selection of relevant previous research is presented below.

#### **1.7.1. Demographic Background and BSE**

Several studies, which examined factors associated with BSE practice, have included various socio-demographics, e.g. age, race, socio-economic status and family status, alongside other variables. Cromer and her colleagues (1989) reported no significant differences in compliance rates by age, race or socio-economic status, in a sample of 69 adolescent women (mean age 15.5) in the USA. Ronis and Harel (1989) examined 619 women, aged 21 or older. They reported that women aged under 35, black, less educated, unmarried, unemployed and of low income were found less likely to have performed BSE. According to Millar and Millar (1992), in a sample of 36 women

aged 20 to 40 plus, BSE performance was lowest for women aged 40 years old or over. On the contrary, according to Stillman (1977), who assessed 122 women in the USA, aged 20 to 60, it was the 40 to 60 year - old group, who reported higher practice, and the 30 to 39 year – old group, who reported lower practice of BSE. In a study of 400 women in Northern Ireland by Murray and McMillan (1993), marital status emerged as the most important predictor of BSE, with married women being more likely to perform. A significant correlation between BSE frequency and marital status was also found by Patistea and colleagues (1992) in their study of 268 Greek women.

Findings on the association between demographic variables, especially age, and BSE remain more or less inconclusive.

### **1.7.2. History of Breast Disease and BSE**

The association between history of breast disease and practice of BSE has also been examined, with no agreement, as to whether they are positively or negatively associated. In Stillman (1977), those participants with personal history of breast lumps or breast cancer surgery, presented with higher BSE practice, higher perceived susceptibility and less embarrassment to perform BSE. They also presented as more confident in their ability to detect any abnormalities. Strauss et al. (1987) compared 59 women past history of breast cancer (mean age 55.2), 33 of benign breast lump(s) (mean age 51.3) and 80 general population women with no history of any type of breast disease (mean age 47.3). Women with history of breast cancer reported significantly higher rates of BSE frequency, proficiency and knowledge. Similarly, in a study by Hill and Shugg (1989) women with previous history of benign or malignant breast disease were found more likely to have intentions to perform BSE.

In this study three female samples were examined, i.e. breast cancer patients (n = 117), benign breast disease patients (n = 208) and general practice controls (n = 329). According to Beckett et al. (1990), women with previous history of breast lumps (n = 50) were more knowledgeable about breast cancer than those without (n = 50). However, the two groups did not differ in attitudes or practice of the behaviour. Similarly, Wellisch and colleagues (1991) highlighted that women with maternal history of breast cancer exhibited higher perceived susceptibility and had more knowledge about risk factors to breast cancer, but no difference in BSE practice was found between those with and those without maternal history of breast cancer. In general, previous research has suggested that women with past history of breast disease differ in their attitudes, beliefs and practices from women without such history. However, positive attitudes towards BSE are not always associated with frequent BSE practice, even in women with personal or maternal history of breast disease.

### **1.7.3. Social Cognition Models (SCMS): Advantages and Disadvantages – The Health Belief Model (HBM)**

One of the factors that has been examined in association with BSE practice is health beliefs. However, before we present previous relevant studies, it is worth examining advantages and disadvantages of the SCMs and the HBM in particular, as theoretical and methodological frameworks for the understanding of health behaviours.

The social cognition models commonly used in health psychology include the Health Belief Model (Becker, 1974; Janz & Becker, 1984), the Theory of Reasoned Action – Planned Behaviour (Ajzen & Fishbein, 1980; Ajzen 1991), Social Cognitive Theory approaches (Bandura, 1991; Schwartz, 1991) and protection Motivation Theory

(Maddux & Rogers, 1983; van der Velde & van der Pligt, 1991). They have been applied to a number of health behaviours, including BSE.

According to Conner (1993), potential advantages of SCMS include:

SCMs provide a clear theoretical background to research. They offer guidance in the selection of variables to measure, the procedure for development of reliable and valid standardised measures and how these variables are combined in order to predict health behaviours and outcomes. As such they promote coherence and facilitate comparison of findings between studies. There is also considerable overlap in the variables identified by these models, evidence that the key cognitions in relation to health have been identified.

SCMs also identify important variables for intervention. By testing various components alongside each other, they provide information on relative effects of differing variables. Such information enables the development of effective intervention, targeting cognitions that underlie unhealthy practices.

Disadvantages of using SCMs, according to Conner (1993), include:

Firstly, SCMs can be applied to a limited range of health behaviours and outcomes.

This is so, because: (a) They ignore mindless or habitual behaviour. It is only in the case of major decisions rather than everyday trivial health issues that individuals are likely to carry out the elaborate cost-benefit type of analysis that SCMs assume. (b)

They fail to consider some relevant variables. There is a growing body of research that emotional or affective reactions have a direct impact on decision to perform some health behaviours (Breckler & Wiggins, 1989; Millar & Millar, 1990).

Secondly, SCMS merely pick up common influences on health behaviours (e.g. outcome expectancies, self – efficacy expectancies etc.), neglecting personal beliefs, emotional, motivational and individual factors.



In addition, they deal ineffectively with the “attitude-behaviour” relationship. The link between health attitudes and beliefs and practice of health behaviour is not always as strong and consistent as suggested by SCMS. Health decisions may be influenced by a number of other variables, e.g. social, economic, environmental and cultural, also neglected by SCMs.

Finally, the conceptualisation of social cognition processes in health, proposed by SCMs, may be problematic. Individuals are not always organised, rational and systematic health decision – makers, as assumed by SCMs. Also different decisions and outcomes are prioritised differently, according to their importance and are dealt with following different decision making strategies. In addition, SCMs adopt non – dynamic views of the individual and health behaviours. Influences on health – related behaviour are usually assessed at a single moment in time with little consideration for the interactive and changing nature of health decisions.

Despite potential limitations, SCMS have attracted a lot of interest in health psychology and have demonstrated some success in predicting health behaviours. However, there is large variability in findings regarding applicability and predictive power of SCMS. The reasons why SCMS have not always predicted large proportions of variance in health outcomes are related to inadequate testing, due to a number of reasons, such as inadequate operationalisation of constructs, inadequate analysis, model misconceptualisation and mismatching between measures and health behaviours.

The advantages and disadvantages of the HBM, which is used as a general framework in the present thesis, will be briefly presented as follows:

- Its applicability has been tested in a wide range of health behaviours. It has provided a theoretical framework for numerous investigations of determinants of a wide range of health outcomes, including adherence to BSE and screening mammography.
- Its common sense constructs are easy to comprehend and utilise.
- HBM has brought attention on modifiable psychological prerequisites of behaviour, e.g. attitudes, beliefs and intentions, as opposed to less modifiable ones, e.g. traditional personality dimensions. Consequently, it has provided a basis for practical interventions across a range of health behaviours.

Despite the impressive record of HBM-inspired research, several limitations have been identified (Sheeran & Abraham, 1996):

- Its common sense and expectancy-value framework simplifies individual health – related representational processes.
- Broadly defined theoretical components (e.g. health motivation and cues for action) and lack of qualitative distinctions between beliefs encompassed by each construct (e.g. benefits versus barriers) may result to different operationalisations not being strictly comparable.
- The model has also been criticised for not articulating anticipated relationships between the components. As a result, evaluations of applicability and clarification of the causal direction of the belief – behaviour relationship may become difficult.
- HBM has an avoidance orientation. Disease is regarded as a negative condition that needs to be avoided. This is in contrast to the more recent positive view that disease is a particular state of health that might possibly serve as a positively challenging experience and an opportunity for acquiring new skills and re-evaluating old coping patterns (Maiman & Becker, 1974). In addition, HBM fails to explain whether the

improvement of health in an already reasonably healthy person (or not diagnosed with disease at the time of assessment) has any motivational effects in influencing future health – related action. In other words, it remains questionable whether the HBM can adequately account for positive health actions.

- The proposed mediation of socio-economic influences on health remains unclear.

According to the HBM, individuals are portrayed as a-social and im-personal economic decision-makers. As a result, HBM fails to account for social and affective influences on health behaviours.

- Although it is assumed that diverse personality, social, demographic and structural characteristics (e.g. knowledge and access to care) can affect health – related motivation and perceptions, these variables are not construed as directly causal to health behaviours (Becker & Maiman, 1975).

A number of HBM studies, which have examined the association between BSE practice and multiple factors in a single study, are presented below. Murray and McMillan (1993) examined the association between health beliefs (i.e. susceptibility, seriousness, benefits, barriers, health motivation), health locus of control, using the Multidimensional Health Locus of Control Scale (Wallston et al., 1978), emotional control, as measured by the Courtauld Emotional Control Scale (Watson et al., 1984) and confidence in cancer screening behaviours (i.e. BSE and cervical screening attendance). Several components of the HBM and of locus of control were significant predictors of the behaviours examined. The most important predictor of BSE was confidence in how to practice BSE.

Barron et al. (1997) examined coping style (i.e. anxiety and defensiveness) and health beliefs (i.e. barriers, benefits, confidence) in relation to BSE (proficiency and frequency) in a sample of 269 employees in a medical centre and a professional

nurses' group. According to a hierarchical regression analysis, coping, when entered at step 1, was a better predictor of BSE frequency than of proficiency. When the six HBM variables were entered at step 2, only perceived barriers was consistently related to BSE frequency. Furthermore, compared to coping style, barriers explained more variance in the proficiency but less variance in the frequency variable.

Friedman and colleagues (1994) examined dispositional optimism, self – efficacy and health beliefs (i.e. reasons for doing BSE, barriers) as predictors of BSE among other variables (i.e. demographics and BSE knowledge) in a sample of 427 gynaecology patients. Multivariate analysis showed that several psychological variables, including reasons for doing BSE, self – efficacy and barriers to BSE were related to frequency. Overall, the variables examined in this study accounted for 37% of the BSE frequency variance.

The above studies used large samples and standardised questionnaires to measure non – traditional personality variables and coping. They also employed multivariate analysis to define the amount of variance explained. Apart from the weaknesses of the HBM studies stated previously, these studies were also limited regarding sample variability. Also they did not include traditional personality variables (stable and enduring traits/disposition), such as neuroticism and extraversion, hostility and type A personality. In addition, coping, when included, was not examined alone in relation to the health behaviour in question. Finally, because HBM constructs were sporadically included, variance explained by health beliefs overall might have not been accurately calculated.

Such and other research has demonstrated that the HBM could explain some aspects of BSE adherence, whereas other factors, e.g. personality and socio-demographics,

might contribute as well. Studies examining specifically the role of health belief constructs in BSE adherence are presented below.

#### **1.7.4. Health Beliefs and BSE**

Definitions of health belief constructs (both generic and specific to the present research) are presented in Chapter 4, paragraph 4.3. General Theoretical Background and Selection of Variables.

The role of health beliefs has been persistently examined in relation to BSE (see Table 1.2.). Most of the studies have found some association between some health beliefs and BSE (Manfredi et al, 1977; Hallal, 1981; Schlueter, 1982; Champion, 1984; Hailey, 1986; Calnan & Rutter, 1986; Strauss et al., 1987; Ronis et al., 1989; Ronis & Kaiser, 1989; Nemeck, 1990; Beckett et al., 1990; Wyper, 1990; Salazar and Carter, 1994; Friedman et al., 1994; Katz et al., 1995). A few studies have found no significant association between the health beliefs examined and BSE (Stillman, 1977; Cromer et al., 1989; Ruda et al., 1992; Cromer et al., 1992).

Janz and Becker (1984) presented a critical review of 29 HBM studies published during 1974-1984, tabulated the findings of 17 studies conducted prior to 1974 and provided a summary of the total 46 HBM studies (18 prospective, 28 retrospective). Out of the studies reviewed, 24 examined preventive health behaviours, BSE included, 19 sick-role behaviour and 3 addressed clinic utilisation. The reviewers concluded that, perceived barriers proved to be the most powerful of the HBM dimensions across the various study designs and behaviours. In particular, statistically significant findings related to the association between BSE practice and barriers were present in 93% of the studies. Statistically significant associations between

susceptibility and BSE were present in 86% of the studies. Benefits were significantly associated with BSE in 74% and severity in only 50% of the studies (Janz & Becker, 1984).

Inconsistencies in findings across related research, as regards health beliefs and BSE, could be attributed to the following:

Firstly, diversity in sampling procedures and methodology (see Table 1.2). Convenience sampling procedures have been widely used and participants were recruited from various groups, clubs or organisations (e.g. Hallal, 1982; Routledge, 1987; Wyper, 1990; Friedman et al., 1994; Salazar & Carter, 1994). Random sampling has been used in few studies (e.g. Hill and Shugg, 1989; Beckett et al., 1990). Self – report questionnaires were used in the majority of studies. Questionnaires could be postal (e.g. Rutledge, 1987) or completed in a group setting in the presence of the researcher (e.g. Nemcek, 1990). Another method used was interviews, either telephone (e.g. Becket et al., 1990) or home interviews. Interviews could either be structured (e.g. Calnan & Moss, 1984) or un-structured (e.g. Salazar & Carter, 1984).

Secondly, heterogeneity of instruments used to measure the same health beliefs. Measures were most often self – devised (e.g. Schlueter, 1982; Hill & Shugg, 1989). Nevertheless, previously used / standardised measures have also been employed by some studies (e.g. the Health Belief Questionnaire by Stillman, 1977, used in Hallal, 1982 and Becket et al., 1990 and the Modified Champion Health Belief Instrument, used in Routledge, 1987 and Wyper, 1990).

Thirdly, lack of common, widely accepted, definitions for each of the health belief constructs. For example, the term “usefulness of BSE” was often used to define perceived benefits (Salazar & Carter, 1994). Perceived benefits and barriers were

frequently merged into one single variable, as in Calnan and Rutter (1986). Calnan and Moss (1984) under the term “health motivation” measured concern about health, willingness to seek medical care, use of preventive health services and pattern of personal health behaviour. Ronis and Harel (1989) measured two types of perceived severity to breast cancer: “severity late”, which included beliefs about severity of breast cancer when the disease was not treated promptly, and “severity early”, which included beliefs about severity given that breast cancer was diagnosed and treated in an early stage.

Finally, sporadic and fragmented examination of the health belief variables was evident. Very rarely have all the health belief constructs been examined simultaneously in a single study. Different studies have focused on different constructs (see Table 1.2). Even in those studies that attempted to examine the health belief constructs as a whole, cues for action were usually omitted (Champion, 1984; Nemcek, 1990).

The above limitations have significantly contributed to inconsistencies regarding the association between health beliefs and practice of BSE. More importantly they could account for the inconsistency in reported predictive values of health beliefs in relation to BSE.

**Table 1. 2. Studies examining the association between Health Beliefs and BSE**

Reference	Sample Size and Composition	Health Belief Constructs	Results
Stillman (1977) (USA)	122 women, aged 20-59, members of specific women's organisations	Perceived susceptibility Perceived benefits of BSE	Health beliefs were not associated with BSE practice. Over 20% of the sample scored high in health beliefs but were non-practisers.
Champion (1984) (USA)	301 women, aged 17-82, obtained from membership of organisations and businesses in a large metropolitan area	Susceptibility Seriousness Benefits Barriers Health motivation	HBM constructs accounted for 26% of the variance in BSE practice. Barriers were the best individual predictor, accounting for the largest proportion of the variance (23%). Benefits, susceptibility and seriousness individually did not account for a significant amount of the variance.
Alagna & Reddy (1984) (USA)	73 women, aged 18-73), attending a health fair	Perceived susceptibility Perceived severity Barriers to BSE performance Perceived efficacy (self-confidence)	Perceived efficacy was a positive significant predictor of BSE proficiency. However, except for perceived efficacy, HBM variables showed no strong associations to BSE practice.
Wyper (1990) (USA)	202 adult women, aged at least 18 years old, recruited from women's groups at local churches, a university affiliated-medical practice, health - related public events and participants in a breast education programme	Perceived susceptibility * Perceived seriousness Perceived benefits Perceived barriers  *Susceptibility and seriousness were combined to form "threat of BC"	Barriers were negatively associated with BSE practice and susceptibility positively associated with BSE practice. Only those two health belief constructs predicted BSE practice significantly.



### **1.7.5. Knowledge and BSE**

Knowledge about breast cancer and related issues is another research area in relation to BSE practice. Related research has been inconclusive as there are (a) studies suggesting a positive relationship between aspects of knowledge and BSE, (b) studies suggesting a negative association and (c) studies that failed to establish any kind of association. A selection of related research is presented below:

Ronis and Kaiser (1989) suggested that knowledge about breast cancer and BSE procedure could facilitate practice of BSE, because they are positively related to confidence on the ability to practise the behaviour (n = 203, 71% aged under 21).

Patistea et al. (1992) found a positive association between BSE frequency of Greek women (n = 268) and their knowledge about BSE and about facts related to breast cancer.

On the contrary, Ruda et al. (1992) examined a sample of 59 nursing and 55 non-nursing college students (age range 20-39). Nursing students achieved a statistically significant higher score on knowledge about breast cancer, but their BSE rates were not different than non-nursing students'.

Similarly, Schlueter (1982) examined knowledge and beliefs about breast cancer and BSE in athletic and non-athletic women (n = 663, age range 20-29), recruited from sorority alumnae groups and athletic clubs. No significant association was found between BSE, knowledge about breast lumps and about risk factors of breast cancer.

Other studies have supported Schlueter's results (e.g. Cromer et al., 1992; Beckett et al., 1990).

Another large area of research has been devoted to identify knowledge deficiencies and misconceptions about breast cancer and the recommended BSE procedure. It has been suggested that women in general are not aware of BSE recommended timing

(Cromer et al., 1989; Budden, 1995), of recommended steps / procedure that should be followed (Ronis & Kaiser, 1989; Beckett et al., 1990) and of risk factors and warning signs of breast cancer (Schlueter, 1982; Katz et al., 1995). As a consequence, concerns have been expressed about the quality of BSE practice and its sensitivity for those, who describe themselves as practising the behaviour.

In general, previous research on the association between BSE and knowledge presents with the following drawbacks. Firstly, different aspects of knowledge have been examined in different studies. Secondly, rarely has knowledge been investigated in its various dimensions in relation to BSE with a few exceptions. For instance, Roberts and colleagues (1984) looked at knowledge as a three – dimensional variable (n = 810 Scottish women). They looked at knowledge about the breast and breast cancer (physiology and pathology of the breast, e.g. effects of the menstrual cycle in the development of breast disease), knowledge about diagnosis and treatment of breast cancer (e.g. if breast cancer is curable) and knowledge about BSE (frequency, timing, position, use of fingers, pressure, what to look for in a BSE). Such inability to examine knowledge in its wide diversity of aspects could explain inconsistency in findings across studies. Finally it is important to note that there is little research that examined both knowledge about BSE (procedure, technique, steps) and knowledge about breast cancer in a single study (e.g. Ronis & Kaiser, 1989 and Pitts et al., 1991).

#### **1.7.6. Personality and BSE**

Personality variables have recently become a research focus, as potential contributors to BSE. The personality variables presented in this review include: Health Locus of Control, affectivity and coping. Definitions of these (both generic and specific to the

present research) are presented in Chapter 4, paragraph 4.3. General Theoretical Background and Selection of Variables.

#### **1.7.6.1. Health Locus of Control (HLOC)**

Studies that used the Multidimensional Health Locus of Control Scale (MHLOCS) in relation to BSE have produced a number of consistent findings. Powerful others HLOC has been found to hold significant positive associations with BSE frequency (Hallal, 1982; Alagna & Reddy, 1984; Nemcek, 1990; Murray & McMillan, 1993). In most relevant studies, internal HLOC has not been significantly associated with BSE practice, either frequency or technique / quality of performance (Alagna & Reddy, 1984; Katz et al., 1995). Nevertheless, Lau et al. (1986), in their study on 879 university students, suggested that internal HLOC contributed to more frequent BSE only for women with higher value of their health.

Therefore, it could be concluded that there is a positive association between BSE and HLOC, although not strong. Certain types of HLOC may be associated with certain aspects of practice. Previous research on the area was also inconclusive as to whether the association between BSE and HLOC is mediated by other variables (e.g. health value) or is a direct one.

#### **1.7.6.2. Affectivity**

Affectivity has not been directly investigated in relation to BSE, but, in fact, there has been research on closely related affective concepts. Previous research has indicated a positive association between BSE practice and confidence (Ronis & Kaiser, 1989; Katz et al., 1995), self - efficacy (Manfredi et al., 1977; Seydel et al., 1990), optimism (Friedman et al., 1994) and self - concept (Hallal, 1982). On the other hand, non - practising has been associated with being neurotic, introverted, less assertive, less

conscientious (Siegler & Costa, 1994) and highly anxious (Barron et al., 1997). All the latter are considered as components of negative affectivity.

In addition, there has been a growing body of research demonstrating that emotional or affective factors have a direct impact on the decision to perform a variety of health behaviours, including BSE (Abelson et al., 1982; Aijzen & Timko, 1986; Millar & Tesser, 1986; Brecker & Wiggins, 1989; Millar & Millar, 1990).

### **1.7.6.3. Coping**

“Dysfunctional” coping has been associated with non-compliance to BSE recommendations (Barron et al., 1997) and also with delay in reporting breast symptoms (Magarey et al., 1977). In Barron et al. (1997) defensive high anxious women perceived themselves as the most susceptible to breast cancer and scored higher in perceived severity of the disease, while repressors reported the least susceptibility and severity. True high anxious and true low anxious women reported significantly less BSE practice than did repressive and defensive women. Magarey et al. (1977) looked at psychosocial factors, delay in seeking medical help and BSE practice in women with breast cancer symptomatology, admitted for a breast biopsy (n = 90). Use of the ego - defence of intellectualisation - isolation, absence of verbally reported anxiety and presence of depression reported verbally were all associated with delay in reporting breast symptoms.

In general, it could be concluded that previous research on personality and BSE lacks studies that have adequately considered the role of certain personality variables (e.g. affectivity) in adherence with BSE.

### **1.8. Importance of BSE specifically for Low-Risk Age Groups of Women**

Although breast cancer is currently one of the most common causes of death among older women, it is rare in adolescents (Cromer et al., 1992; Hellenic Anti-cancer Institute, 2000). It is estimated that breast cancer in adolescents accounts for less than 1% of all breast cancer cases (Diehl & Kaplan, 1985). Because of its rarity in younger women, the value of teaching BSE and assessing its practice in adolescents has been questioned (Goldbloom, 1985).

However, there are certain psychological - educational and medical reasons why BSE is important in low-risk age groups. First of all, it has been shown that adolescents, who perform BSE, familiarise themselves with their breast anatomy. This familiarisation assists them in identifying future breast abnormalities. It is also important in establishing health practices particularly helpful when they are into the risk age group for breast cancer (over 45 years) (Goldbloom, 1985; Mamon & Zapka, 1986). On the other hand, unlike older women, women of young age are not eligible for screening mammography. Considering that clinical breast - examination requires medically trained personnel and it is time consuming and costly, it is often offered to older women. Consequently, the method easily available for younger women is BSE. Moreover, BSE is very important for detection and monitoring of numerous benign breast complaints in many age groups (e.g. mastitis, cysts, fibroadenomas, diffuse nodularity, mastalgia, and abscesses). These conditions are not life – threatening but can be distressing and painful, if not carefully monitored and subsequently appropriately treated.

The importance of regular BSE for monitoring benign breast conditions is also demonstrated in the following study. Fox et al. (1997) carried out a randomised clinical trial aiming to: assess anxiety and depression levels in women with mastalgia

and to evaluate the effects of special relaxation methods in the management of the condition. A total of 45 women with mastalgia severe enough to warrant investigation and treatment were assigned to two groups: monitoring through diary keeping and practice of relaxation therapy versus diary keeping alone (control). All groups presented with relatively high levels of anxiety, as measured by the HADS (Hospital and Anxiety and Depression Scale). Patients with cyclical mastalgia scored significantly higher in anxiety than those with non-cyclical mastalgia. Relaxation therapy plus diary keeping was more effective than diary keeping only in reducing pain and increasing pain-free days. Patients with cyclical mastalgia were more responsive to relaxation therapy than those with non-cyclical mastalgia. This study clearly indicated that: (a) benign conditions, like breast pain can be anxiety provoking, (b) appropriate treatment can reduce physical symptoms and subsequently anxiety and (c) monitoring may not be curative per se, but is necessary in identifying patterns of the condition and lead to appropriate treatment.

Finally, previous research has suggested that attendance of mammography, which is suitable for older and at higher risk age groups, is associated with practising BSE (Rodriquez et al., 1995). This adds to the importance of encouraging BSE early younger age groups.

### **1.9. Factors associated specifically with BSE Practice in Low-Risk Age Groups**

There have been only a few studies, which examined predictors of BSE in low-risk age groups (i.e. “adolescents” and “young” women) (Hailey, 1986; Cromer et al., 1989; Ronis & Kaiser, 1989; Pitts et al., 1991; Cromer et al., 1992; Ruda et al., 1992; Millar and Millar, 1992; Budden, 1995; Katz et al., 1995; Wardle et al., 1995; Olapedo & Adegoke, 1997). Subjective control over one’s health (Cromer et al.,

1992), self – efficacy (Katz et al., 1995), personal and family history of breast cancer (Pitts et al., 1991), personal experience of breast problems (Olapedo & Adegoke, 1997), perceived benefits and health awareness (Pitts et al., 1991), perceived susceptibility to breast cancer (Katz et al., 1995), believing in the importance of BSE (Wardle et al., 1995) and being familiar with the procedure, being more worried about breast cancer and more willing to increase knowledge about BSE (Ronis & Kaiser, 1989) have been positively associated with BSE practice in younger women. Nevertheless, previous research on BSE in younger women presents the following weaknesses.

Firstly, there is great diversity in the definition of the terms “young” and “adolescent”. The definitions employed and the age cut-off points used to divide between “young” and “old”, in some studies, had followed instructions by health authorities about age - related breast cancer risk (e.g. Budden, 1994). Alternatively, definitions were based on medical criteria of biological maturity, e.g. beginning of menstruation (e.g. Cromer and colleagues, 1989). In other studies, however, researchers provided no explanation about the choice of a specific definition or age – related criterion (e.g. Cromer et al., 1989; Steptoe et al., 1994; Wardle et al., 1995; Budden, 1995).

The area is also characterised by a distinctive lack of studies regarding acceptance of BSE by low-risk age groups. Only a few studies have focused on BSE attitudes and practices in low-risk age groups. These were limited in providing only baseline data on compliance rates and attitudes (Wardle et al., 1995). They examined the association between certain variables and BSE practice (Cromer et al., 1989; Cromer et al., 1992) or, at best, explored differences between practisers and non-practisers, in terms of knowledge about BSE, attitudes, concerns and intentions (Hailey, 1986).

In addition, predictors of BSE practice in younger age groups have rarely been examined with a few exceptions (e.g. Pitts et al., 1991; Cromer et al., 1992; Katz et al., 1995; Wardle et al., 1995) (see Table 1.3.). Studies often provided information on variables associated with BSE practice and BSE – related knowledge without reporting predictive values of those variables (e.g. Pitts et al., 1991; Wardle et al., 1995).

Furthermore, there has been little information available about the frequency and performance quality of BSE in low - risk age groups. This is the case with relevant studies worldwide (Cromer et al., 1992), but more so in Britain with a few exceptions (e.g. Pitts et al., 1991; Wardle et al., 1995).

It is also interesting that there is consensus in the research to date that overall practice rates in low-risk age groups are generally low, especially among students. Nevertheless, reported actual rates vary across studies (e.g. Hailey, 1986; Pitts et al., 1991; Cromer et al., 1992; Budden, 1995; Wardle et al., 1995)

Finally, studies on BSE and younger women are characterised by heterogeneity of sample characteristics. A large proportion of studies have been conducted in student samples with great variability of training course, educational grade/level and, consequently, age range of participants. Some studies have been conducted in undergraduate university students (e.g. Wardle et al., 1995), others in college (e.g. Ruda et al., 1992) and others in high school students (e.g. Cromer et al., 1992). Those that have focused on university students have been conducted in nursing students (e.g. Budden et al., 1995), in students on non-health-related courses (e.g. Wardle et al., 1995) or in students from a number of different courses (e.g. Olapedo & Adegoke, 1997). The above methodological differences across studies could account for differences in reported BSE rates.



**Table 1.3. Studies examining Predictors of BSE in Low-Risk Age Groups**

Reference	Sample Size and Composition	Predictors examined	Results
Pitts et al. (1991)	176 British (mean age=22.3) & 125 Zimbabwean (mean age=22) undergraduate university social science students	<p>Perceived susceptibility</p> <p>Perceived benefits of BSE</p> <p>Perceived barriers to BSE (embarrassment)</p> <p>Exposure to info about BC (Personal/family experience of BSE)</p> <p>Exposure to info about BSE (have heard of)</p> <p>Knowledge of BC (risk groups, symptoms, causes)</p> <p>Knowledge of BSE (how to perform)</p> <p>General health awareness</p>	<p>British sub-group: BSE practice was predicted by exposure to BC (personal or family), perceived benefits and health awareness</p> <p>Zimbabwean sub-group: BSE practice was predicted by exposure to BC and health awareness.</p>
Cromer et al. (1992)	85 and 54 post-menarcheal high school students (mean age=15.9) in the USA 3 and 8 months respectively after group BSE instruction	<p>Proficiency in BSE performance (recommended frequency and timing)</p> <p>Control over health</p> <p>Health beliefs (perceived susceptibility, vulnerability, costs and benefits, health motivation)</p>	<p>No differences between compliers and non-compliers in perceived threat (susceptibility and severity), benefits, barriers and health motivation.</p> <p>Subjective control over one's health predicted compliance with BSE.</p>
Wardle et al. (1995)	16,486 female university students from 20 European countries (BSE frequency and practice reported by 9,181), aged 17-30	<p>BSE practice (knowledge how to perform)</p> <p>BSE attitude (importance of BSE)</p>	<p>Belief that BSE is important for health was a significant predictor of regular practice (&gt; 10 times a year) in all countries examined.</p>
Katz et al. (1995)	178 college students: 44% male (mean age=23.3) and 56% female (mean age=21.43) in the USA Males were assessed in testicular self-examination and females in BSE	<p>Cancer knowledge/ awareness</p> <p>Self-efficacy</p> <p>Barriers</p> <p>Personality:</p> <p>(a) Health Locus of Control</p> <p>(b) Loneliness (perceived social support)</p> <p>(c) Hypochondriasis (worry about illness/physical symptoms)</p>	<p>No association between internal health locus of control, hypochondriasis, loneliness and BSE practice.</p> <p>The best predictors of BSE fear of developing BC and self – efficacy.</p>

### **1.10. General Conclusions on Previous BSE – Related Research**

From the previous review it could be concluded that there is little agreement across the literature about BSE adherence amongst the female population not only in the UK but also internationally. Also there has been a noticeable lack of BSE studies conducted in the UK and Europe in general. Furthermore, information on BSE attitudes, behaviours and adherence rates in the UK and other European countries is rather limited. In addition, there have been only a few cross-cultural studies, examining BSE practices across European countries. Finally, the most widely researched factors / groups of factors on BSE research are demographics, health beliefs, knowledge, personal and family history and personality variables. Studies examining the predictive value of each and all of the above variables in relation to BSE adherence have been very rare.

### **1.11. The Contribution of the Present Thesis**

Considering the previous research on BSE, this part of the thesis will attempt to contribute by addressing the following key points.

1. Previous research was characterised by inconsistency and diversity in the assessment of BSE practice, which was usually measured within different time intervals and by use of different questions. The present thesis aims to examine BSE as a dynamic process, which develops over time. For this reason adherence to BSE is assessed by use of three separate questions. The first question aims to assess whether participants had ever tried the behaviour before in their lifetime. The second question intended to assess participants' adherence to the behaviour in the short-term. The third question aims to obtain data on participants' maintenance of the behaviour in the long-term. In past research only a few studies have assessed BSE practice across more

than one - time interval (e.g. Alagna & Reddy, 1984; Ronis & Harel, 1989; Champion, 1992). In the present study, the choice to assess BSE adherence using three different questions, which correspond to three different time frames of practice, is further supported by the suggestions made by Paul Norman and Mark Conner in their critique, titled "Future directions for social cognition models of health behaviour" (Chapt.7: The Role of Social Cognition Models in Predicting Health Behaviours: Future Dimensions, in Conner and Norman, 1996). Norman and Conner suggested that, in order to fully explain health behaviours, it is necessary to develop a more dynamic approach that examines different stages or phases in the contemplation, initiation and maintenance of the behaviour. Although the present thesis has not adopted a stage model approach, the use of three different questions for the assessment of BSE could be thought as corresponding to an initial exposure and experimentation / attempt to try the behaviour, practice of the behaviour in a short – term context and maintenance of the behaviour in the long – term.

2. Only a few studies reported data both on frequency and performance / quality of technique / proficiency of BSE (e.g. Champion, 1992; Coe et al., 1999) and even fewer considered correct timing of practice in relation to the menstrual cycle (e.g. Becket et al., 1990). Studies that have examined frequency, proficiency and timing of BSE at the same time are extremely rare. The present thesis assesses BSE frequency and also, regardless of whether participants practise BSE, they will be asked questions about: (a) their knowledge of the recommended timing, (b) their knowledge about the recommended frequency and (c) their knowledge about procedure (recommended steps) for an effective BSE.

3. Previous research is generally characterised by lack of a common definition of practice / recommended practice, whereas in some studies such a definition is absent

altogether (e.g. Wellisch et al., 1991). In the present study monthly practice is defined as the recommended frequency of BSE. This decision is based on the fact that in those European countries, where BSE is recommended by health authorities, the recommended frequency is defined as “once a month” (Wardle et al., 1995). Additionally, monthly is the frequency recommended by influential cancer charities in the UK (e.g. the Imperial Cancer Research Fund) and the Hellenic Anti-cancer Institute (2000) in Greece. Monthly BSE is also included in the guidelines of the American Cancer Association (Fink, 1991) and the Australian Cancer Society (Budden, 1995).

4. Furthermore, in the present thesis, knowledge is treated as a multi-dimensional variable, which consists not only of knowledge about breast self-examination per se, but also of knowledge about breast cancer. Irrespective of whether participants practised BSE or not, they will be assessed in their awareness about recommended timing, frequency and procedure of BSE, as well as about the prognosis of breast lumps, age of increased vulnerability to breast cancer and factors that might increase the risk to develop the disease.

One of the core criticisms against previous HBM– inspired research on BSE, was that health belief components were usually examined sporadically and different beliefs have been examined in different studies. To account for the above limitations, the present research incorporates all the components of the HBM (perceived susceptibility to breast cancer, severity of breast cancer, benefits of practising BSE, barriers to performing BSE, health motivation and cues for action), as defined by Becker and his colleagues (1977b).

6. The present BSE research also examines personality amongst other factors in relation to BSE practice. The personality variables chosen are health – related coping

styles, health locus of control and positive-negative affectivity. Only a few studies have examined the role of coping styles (e.g. Barron et al., 1997) and health locus of control beliefs (e.g. Hallal, 1982; Alagna & Reddy, 1984; Murray and McMillan, 1993; Bundek et al., 1993) to BSE practice, whereas to our knowledge no studies have been found on the role of positive-negative affect in BSE practice.

7. Finally, from all BSE studies reviewed, only a few examined multiple factors of BSE practice in a single study. Friedman and colleagues (1994) was the only study reviewed, which not only included multiple variables in a single study, but also these were similar to those included in the present research (i.e. demographics, history of breast cancer, knowledge, health beliefs and personality). Similarly to the present study, Friedman et al. (1994) tested the predictive value of these multiple factors both as a group and as individual predictors. However, Friedman and colleagues obtained their sample from gynaecological outpatients, whereas the present research used samples of female university students and staff, disease - free at the time of assessment.

## **Chapter 2: Screening Mammography Attendance: A Review of the Literature**

### **2.1. Introduction**

The UK is the only country in Europe, and one of the few countries in the world, with a national breast screening programme for the early detection of breast cancer. Every woman aged 50-64 receives an invitation every three years to attend for screening mammography. Women 65 or over are not officially invited but they can be screened on request (The Scottish Breast Screening Programme Report, 1996).

The Breast Screening Programme was introduced in the UK in 1987 for the first time by a Working Group established by the four UK Departments of Health and chaired by Sir Patrick Forrest. The Scottish Breast Screening Programme (SBSP) was phased from 1988 and it was fully operational by 1991, with seven static screening and assessment units supported by nine mobile units. (The Scottish Breast Screening Programme Report, 1996).

The strengths and weaknesses of screening mammography, as a method of early detection of BC as well as research regarding factors associated with breast screening attendance are presented below.

### **2.2. Screening Mammography as a method for Breast Cancer Detection**

There has been a lot of debate on the benefits and costs of screening mammography and whether the first outweigh the second.

The most widely stated advantages are:

- Providing reassurance and reducing uncertainty (Taylor et al., 1980; Dean et al., 1986).

- Providing early detection through frequent screening and thus, decreasing breast cancer mortality rates (Baker, 1982; Shapiro et al., 1982; Verbeek et al, 1984; Taylor et al, 1985; Feig, 1988; Tabar et al., 1992)
- It is a sensitive test that can detect small non-palpable cancers (Hicks et al., 1979; Iino et al., 1994).
- Screening results could be used both in order to inform women about their current health status and help them make or face decisions about clinical investigations (Gerard et al.).

Among the cited disadvantages of screening mammography the following are classified:

- Despite evidence that screening has reduced breast cancer mortality, it is claimed that its efficacy is not clearly demonstrated. Early randomised trials, such as the Health Insurance Plan of Greatest New-York (HIP) and the Swedish Two-County Trial (SNBH), showed a significant reduction in breast cancer mortality of 23% (Shapiro et al., 1982) and 31% (Tabar et al., 1985, 1992) respectively in women offered screening (relative reduction rate). However, the absolute reduction in mortality being respectively 0.05 and 0.14% of screened women (Wright & Mueller, 1995).

A number of randomised controlled trials have been conducted to assess the effectiveness of screening mammography in reducing mortality, such as Malmo (Andersson et al., 1988), Stockholm (de Koning et al., 1995), Gothenburgh (Bjurstam et al., 1997), Edinburgh (Chamberlain et al., 1993; Alexander et al., 1994) and the Canadian studies (Miller et al., 1992, 1992). These studies followed the same methodological pattern by comparing mortality rates between women who have been screened and women who have not (control). Nevertheless, these trials were unable to

provide strong evidence on the effectiveness of screening in reducing breast cancer mortality.

There have also been an equally high number of meta-analytic studies, overviews and critiques on these trials. Although recent reviews of trials on screening effectiveness allowed stronger statistical power for evaluation (Fletcher et al., 1993; Nystrom et al., 1993; Wald et al., 1994), these have failed to demonstrate any efficacy of screening among 40-49 year old women. However, it was suggested that there was a statistically significant but small benefit of screening for women 50 or over. Effects for women over 70 were only marginal, if present.

In general, regarding previous research on screening effectiveness it is worth noting the following: (a) Large samples, rigorous procedures and thorough follow-up were used. (b) There are doubts about the effectiveness of the randomisation procedures in creating cohorts that initially were at equal risk for breast cancer-related death (e.g. genetic predisposition, diet factors) (Metzlin & Smart, 1993). (c) Improvements in quality of mammograms, in management of screened cancers and even in rigour of trial design can account for a divide between early and more recent studies. The spontaneous decrease in breast cancer mortality noticed in early studies coincides with improvement in clinical practice and treatment advances (e.g. Wright and Mueller, 1995). (d) Some studies have possibly contaminated the effect of screening mammography by using it in conjunction with other methods of early detection, e.g. clinical breast examination (e.g. Canadian studies). (e) The criterion chosen to interpret findings, i.e. statistical versus clinical significance, could account for differences in reporting and evaluating the results especially in reviews. (f) Prognostic factors (i.e. tumour size, nodal status and malignancy rate) have rarely been taken into consideration in early trials and reviews. There has been evidence on the association



between those prognostic factors and survival. Duffy et al. (1991) analysed the results of the Swedish two-county study with respect to tumour size, nodal involvement and malignancy grade and looked at the relationship between these factors to screening and survival. It was shown that these factors could account for much of the differences in survival rates. In a Scottish study, Anderson et al (1991) compared pathology data between women invited to screening and control population in the Edinburgh Randomised Breast Screening Project. The size and negative lymph node status characteristics of invasive cancers from the two populations were significantly different. Cancers detected by screening were predominantly “early stage”, whereas cancers in non-attenders and controls were frequently “late stage” (more than pT2) and inoperable. Although there were no significant differences in size and lymph node status between prevalence and incidence screen-detected cancers, the characteristics of histological type of cancer discriminated significantly. Histological characteristics could separate between good and poor survival invasive cancers. There was a significant improvement for the screen detected poor survival group compared with controls. These studies have demonstrated that inadequate consideration of prognostic factors might have lead to contamination of findings on the effectiveness of mammography in increasing survival. (g) Finally, results from early studies on the association between screening and mortality were based on small numbers of end point events, e.g. relatively short follow up (7-10 years) and small catchment areas (e.g. two-county Swedish trial). However, more recent accumulating follow-up results, appear far stronger. For example, Tabar et al (2001) examined 6807 women diagnosed with breast cancer over a 29-year period. Regular mammographic screening resulted in 63% reduction in breast cancer death among women who actually underwent screening. In addition, Duffy et al (2002) compared breast cancer

mortality in pre-screening and screening epochs in 7 Swedish counties. They reported a 40-45% reduction in mortality among screened women.

### **2.2.1. Psychological Considerations of Screening Mammography**

Psychological effects of screening recall (Marteau, 1990; Bull & Campbell, 1991; Gram & Slenker, 1992; Cockburn et al., 1994; Sutton et al., 1995) and anxiety induced by the invitation itself (Maclean et al., 1984; Wright, 1986; Dean et al., 1986; Elkind & Eardley, 1990) have also been explored in previous screening research. It has been argued that participation in a mammography - screening programme may not always be an unequivocally beneficial experience, from a psychological point of view (Cockburn et al., 1994). Thus, there is evidence that a substantial number of women with suspicious mammograms have psychological difficulties, even after been reassured that they do not have breast cancer (Dean et al., 1986; Lerman et al., 1991). Several other studies have examined the psychological effects of screening attendance, recall and false positive results. It has been suggested that breast screening invitations may be anxiety provoking (Maclean et al., 1984; Elkind & Eardley, 1990). Anxiety induced in women with false positive results out-weights the benefits of reassurance and prolongation of life for some cancer patients (Wright, 1986). Recall also increases susceptibility to significant psychological morbidity as a direct consequence of being recalled (Devitt, 1989; Marteau, 1990; Lerman et al., 1991). However, several of these studies have suggested that screening did not result in long - term morbidity nor in long lasting effects on emotional, social and physical functioning (Ellman et al., 1989; Cockburn et al., 1994). It has also been suggested that psychological consequences of receiving the letter of invitation and undergoing

the screening examination procedure (i.e. physical, emotional and social dysfunction) are related to previous levels of concern over breast problems (Swanson et al., 1996). One of the main problems with studies assessing psychological effects of attendance at screening is in obtaining an adequate baseline of mental health, uncontaminated by the screening process (Walker et al., 1994; Gilbert et al., 1998). Questionnaires were usually sent with the screening invitation (Swanson et al., 1996) or assessed baseline mental state at the time of attendance (Ellman et al., 1989; Dean et al., 1986; Bull and Campbell, 1991). Only a few studies obtained such a baseline (Walker et al., 1994; Sutton et al., 1995; Gilbert et al., 1998). A good example is the Walker et al. (1994) study, in which 2,357 women eligible for participation in the UK National Breast Screening Programme were assessed before they knew they were to receive an invitation (baseline) and again at screening 6 weeks later. The Hospital Anxiety and Depression Scale (HADS) was completed at all time points of assessment. The Health Questionnaire (HQ) was completed when attended. Anxiety and depression scores were found significantly lower at screening than at baseline. Women scoring in the borderline range of both anxiety and depression at baseline were more likely to move into the normal than the clinically significant range. Those scoring in the clinically significant range for anxiety at baseline were more likely to move to the normal after screening. The HQ scores indicated that some women reported stress-related behaviour changes in the week prior to screening, especially those who were more anxious or depressed. The strengths of this study are: (a) A baseline measure of mental status uncontaminated by the knowledge that an invitation to attend was imminent. (b) The use of two questionnaires enabling the distinction to be drawn between perceived changes in the week prior to screening (HQ) and the calculation of changes from serial testing (HADS). These findings suggest that women anxious or

depressed at screening were more likely to report adverse changes in the previous week. They also suggest that screening attendance could have an anxiolytic effect, as lower anxiety and depression scores were reported at screening than at baseline. This study, however, did not consider family history of breast cancer and did not examine the effects of recall. Such variables have been considered in another British study by Gilbert et al. (1998). They assessed 124 women on the HADS before being invited to attend, at recall and at 5 weeks and 4 months after recall. At screening and recall they completed the HQ. In the week before screening, women with a family history scored lower in depression and reported fewer stress-related changes than women without a history. At recall all women were more likely to present with borderline or clinically significant anxiety than at baseline or at screening. Nevertheless, for most women, recall – related anxiety lasted less than 5 weeks. Also women with a family history were more anxious 4 months after recall than women without history, although their scores were lower than at baseline. These results suggest that breast screening is more distressing for women with a family history than those without. In addition, recall causes short-term distress in all women regardless of family history.

Finally, there is evidence that some women experience pain and or discomfort due to compression of the breasts necessary to obtain a clear view. Hurley and Kaldor (1992) reported that 35% of screened women find mammography uncomfortable and 6% experience pain. It is claimed that the examination is more uncomfortable or painful for first – time than more experienced attenders (The Scottish Breast Screening Programme Report, 1997).

### **2.2.2. The Risk of Radiation Exposure**

Concerns about repeated radiation exposure at least for some women have been expressed (Law, 1997). It has been suggested that there is a small risk of radiation-induced breast cancer, which depends on dose and age at screening. Those women with very large breast size and high density, who also have many views taken during the screening process, appear to be at increased risk. Even in this group, however, the number for whom the risk of cancer induction exceeds the probability of cancer detection is less than 1 per million, which is normally considered negligible (Law, 1993).

In the UK screening programme the number of cancer cases detected greatly exceed the number predicted to be induced (Law, 1993). In a screening centre performing 15,000 examinations per year, only one induced cancer is predicted in about 7 years of screening under average UK conditions of age and breast thickness (Law, 1991). Nevertheless, it has been suggested that in a small group of women, who are genetically predisposed, radiation even in small doses is more likely to enhance carcinogenesis (den Otter et al., 1993; Friedenson, 2000; Iannuzzi et al., 2001). The risk is greater for the younger (below 30) of those women who carry breast cancer-related oncogenes, e.g. BRCA 1 and BRCA2 gene mutations (Law, 1997). It has also been suggested that, in addition to BRCA1 and BRCA2, which confer a very high risk of breast cancer and are carried out by about 5% of all breast cancer patients, there are also predisposing genes carried out by a much higher proportion. It has been shown that 42% of an unselected series of breast cancer patients and 9% of healthy control subjects show elevated chromosomal radiosensitivity of lymphocytes irradiated in the G2 phase of the cell cycle (Scott et al., 1998). These changes have been associated

with the risk of bilateral cancer (Thomas et al., 2001), which might suggest an elevated radiation risk for a larger than thought proportion of women.

Summarising the evidence, it could be concluded that several studies claim that the benefits of mammographic screening outweigh an anyway small risk. The benefit-risk ratio has been claimed to be only marginally less than the detection-induction ratio (Friedrich, 1991; Law & Faulkner, 2002). Secondly, the risk seems higher for younger women especially those with a genetic predisposition. However, there are no controlled clinical trials for screening young women with multiple first-degree relatives, who developed breast cancer before the age of 45, or young women known to carry BRCA1 and BRCA2 or other breast cancer-associated mutations (Friedenson, 2000). Therefore, the risk remains predominantly theoretical. Finally, lack of evidence has led a number of researchers to suggest caution, e.g. lower doses of radiation, use of other methods of screening, different frequency of screens, in using mammography for women with the above characteristics or even their exclusion from screening programmes altogether (Law, 1997; Mattsson & Rutqvist, 2000; Law and Faulkner, 2001; Brenner et al., 2002).

### **2.2.3. Accuracy of Screening Mammography**

Doubts about accuracy (sensitivity and specificity) of mammography for younger (pre-menopausal) women have also been expressed in previous research. Although screening of women aged over 50 years has allegedly reduced mortality (Wald et al., 1994), the benefits for younger age groups are still uncertain. Density of the breast in young age may result in difficult to interpret mammograms (Brown et al., 2000).

#### **2.2.4. Hormonal influences and Screening Mammography Effectiveness**

It is claimed that mammography should be avoided in the pre-menstrual phase of the cycle for the following reasons: (a) Many women experience breast tenderness or pain at that time. This may cause greater discomfort at the compression of the breast and jeopardise the quality of films. (b) Increased density of the breast makes detection difficult and may increase false negative rates (Bassett et al., 1990; Baines et al., 1997; White et al., 1998; Brown et al., 2000).

#### **2.2.5. Interval Cancers and Screening Mammography**

It has been suggested that a number of women develop interval breast cancer, either from an incorrect diagnosis, or a fast growing cancer, which appears in between screening rounds (Dilhuydy & Barreau, 1997). Interval cancers can reduce accuracy of mammography to 73% (Panoussopoulos et al., 1977). Nevertheless, the hypothesis that a high growth rate is associated with a poorer prognosis and that interval cancers constitute a more aggressive form of breast neoplasia is not always supported. Frisell et al (1992) for example analysed the survival rate in a group of breast cancers detected in the intervals between screenings in relation to clinically detected cancers in a non-screened population. After controlling for differences in tumour size, stage distribution and mean age, no differences in survival between interval and non-interval cancers were found. There was no correlation between length of the interval and survival of patients with interval cancer.

#### **2.2.6. False negatives and Screening Mammography**

A negative screening result can lead to delay in definitive management and to re-presentation of those cases at a later date with poorer prognosis (larger tumours,

pathological involvement of axillary glands and locally advanced disease) (Walker & Langlands, 1990). Further to that, recent enthusiasm to promote mammographic screening may create unrealistic expectations, by providing false reassurance. Some women might be led to falsely believe that a negative examination is assurance that cancer is not present in its early detectable stage (Keith et al., 2002).

### **2.2.7. Reliability of Screening Mammography**

Concerns have also been expressed about interpretation reliability. Radiologists may interpret films regardless of patient age and different degrees of interpretation error exist for different radiologists as well as for the same radiologist after period of time (Keith et al., 2002).

The previous analysis suggests the following:

Firstly, screening mammography may have a number of side effects, i.e. anxiety and physical discomfort associated with the procedure, false-negative and false-positive results, overdiagnosis and detection of slow growing breast cancers, radiation hazards, psychological morbidity. Secondly, because of its side effects and vulnerabilities, breast screening might not be beneficial for the majority of women: those who have not and will never get cancer, do not receive an invitation, do not attend or attend occasionally, deny referral for further examinations and surgical biopsy, develop interval breast cancer, those diagnosed with invasive cancer, those who would have been cured even if their cancer had not been detected by screening and those diagnosed with invasive breast cancer that would never progress to patent disease (Dilhuydy & Barreau, 1997). Thirdly, despite the lack of clear evidence on the ability of screening mammography to reduce mortality in women 40-49 and those over 70, there is still some benefit, though statistically small, for those aged over 50. This is



the age eligible for the national breast screening programme in the UK anyway. Finally, screening mammography might be particularly useful for certain high - risk groups, due to family history or life style factors (e.g. exposure to chemicals). There has been evidence suggesting that for such groups, and especially for the younger of these women, early and regular mammographic screening can increase detection rates of both malignant and pre - malignant lesions and reduce breast cancer mortality (Meiser et al., 2000; Dolapsakis et al., 2001).

As a result of the above limitations of mammographic screening, alternative methods, such as magnetic resonance imaging (MRI), have been proposed. MRI is claimed to have an acceptable false positive rate and fewer side effects, which makes it more appropriate for premenopausal women at high genetic risk for breast cancer. This is exactly the focus of a large on-going national multi-centre controlled study in the UK (Brown, 2000). Until the results of this study are published, there is no evidence on which to reject screening mammography in favour of MRI, even for this specific group of women. At the moment the effectiveness of MRI as a diagnostic tool is unproven, the costs are high and, unlike to x-ray mammography, there are no standards for quality control and image interpretation.

### **2.3. Relationship between Breast Screening Attendance and Demographic Background**

Numerous studies have reported a positive association between age and screening completion. Fajardo et al. (1992), in their study of 488 primarily white, well educated, middleclass women attending three health facilities, found that screening attendance increases with age. Crane et al. (1996) specifically identified an age range 60 to 64 as more likely to associate with adherence (n = 576 country health department patients,

aged 50 and over). Champion and Miller (1996) studied women aged 35 and older (n = 541) and suggested that being older is related to being more health motivated, which is associated to adherence.

There have been though studies suggesting a negative association between old age and attendance or screening-related knowledge and attitudes. In a review of the literature on barriers and facilitators of mammography acceptance by Rimer (1992), it was found that old age (being above 65 years old) is one of the most important barriers. Danigelis et al. (1995) examined three age groups (40-49, 50-64 and 65 or older) of African-American women (n = 648). Younger women (aged 40-49) were more knowledgeable about screening guidelines and more exposed to information from the mass media (TV, radio). Older women (aged 65 and older) were more dependent on their physician's recommendations in their decision to go for breast screening than on other sources.

In general, several studies, having examined socio-economic status variables as a factor of screening attendance, found a positive association between the two (Rimer, 1992; Price, 1994; Champion & Miller, 1996). Research suggesting no association is certainly rather limited (Hobbs et al., 1980; Burg et al., 1990). Thus, women of lower socio-economic status were much less likely to use mammography or to be repeated users (Price, 1994). Owens et al. (1987), in their UK – based study, compared demographic characteristics, health behaviour and knowledge of breast cancer in 183 women from a regional breast screening unit with those of 182 women from a breast clinic and 41 controls. They pointed out that screening fails to attract a truly representative sample of women. They also raised the possibility that this failure is a consequence of sociological (e.g. socio-economic status) as much as psychological factors (e.g. personality). In addition, Champion and Miller (1996) have suggested

that women of higher socio-economic status are more likely to perceive increased amounts of social influence in relation to screening attendance and other health behaviours. They are also more likely to be more educated and in contact with people for whom health-related behaviours are important.

Occupational status and education have been, in general, positively associated with attendance (Burg et al., 1990). Women of lower education and in non - professional jobs are more likely to be non- attenders. Routledge et al. (1988) for example found that university faculty employees were more likely to complete screening or to have had a recent mammogram than women who were non- professional workers (n = 882, mean age = 49.1).

Results on the effect of marital status on mammography attendance have also been contradicting. Studies could be categorised in those reporting a positive association between being married and attendance, a positive association between being single and attendance and those suggesting no association between marital status and attendance. Several studies have reported that married women were more likely to complete breast screening (Calnan, 1984; Rimer et al., 1989; Rimer, 1992). De Waard et al. (1984) found that single women were more likely to complete screening than married or ever married women with large families. Routledge et al. (1988) on the other hand reported no association between being married and completion.

The previous analysis regarding the association between demographics and breast screening attendance suggests that being older, of higher educational and socio-economic status is positively associated with being an attender.

## **2.4. Relationship between Screening Mammography, Personal History of Breast Problems, Family History of Breast Cancer and of Cancer in general**

Research addressing the relationship between attendance and history of breast disease has resulted in contradicting findings. In a USA study on the association between fear of breast cancer and mammography (n = 838 women, age range 40-75) women with history of breast problems were found as more likely to have been screened (McCaul et al., 1996). Hobbs et al. (1980) conducted an interview-based study of 100 British invited screened women (attenders), 100 invited unscreened women (non – attenders) and 50 self – referred women (64 or over). As opposed to McCaul et al. (1996), Hobbs and colleagues did not find a significant association between attendance and reported personal history of breast disease.

According to several studies, having a family history of breast cancer increases likelihood of screening – mammography attendance (e.g. Lerman et al., 1990; King et al., 1995; Rodriguez et al., 1995; McCaul et al., 1996). Having a mother or sister diagnosed / died from breast cancer is positively associated with completion of screening mammography (Zapka et al., 1989). Other studies have found no association between family history and attendance (Laville et al., 1989; Kreitler et al., 1994), while in others family history was predictive of non - attendance (Rutledge, 1988; Hyman et al., 1994).

The relationship between personal past history of female cancer and mammography attendance also appears a positive one. Fullerton et al. (1996) conducted a community-based study (n = 1,134, aged 55 and older) of women who had access to health care. They found that participants who reported to have been diagnosed with reproductive cancer were significantly more likely to be classified as regular mammography users.

Therefore, it seems that the majority of previous studies suggest a positive association between previous or family history of breast disease and screening mammography attendance. However, contradictory findings could be attributed to differences in the definition and assessment of “previous history” and “family history” (having a first-degree relative, e.g. mother, sister, daughter increases the risk of breast cancer more than more distant history and might have a stronger influence on screening behaviour). Differences in sample characteristics (e.g. age range) and in screening guidelines and availability might also account for such result inconsistencies across studies.

## **2.5. Relationship between Screening Mammography Attendance, Health State and Use of Health Services**

Previous research has claimed that compliance to mammography recommendations may be associated with previous screening attendance, other health behaviours and use of medical / health services. Rodriguez et al. (1995) conducted a study on predictive factors associated with enrolment and adherence in a breast - screening program in Barcelona, Spain (n = 896). Having had a previous mammogram was the only behavioural factor that showed an independent relationship with enrolment to breast screening. In a study by King et al. (1995) mammography history was significantly related to mammography use in women aged 65 –74 in the USA (n = 548). Price (1994) focused on economically disadvantaged females (annual household income less than \$18,000), (n = 500, age range 30-89). They suggested that those, who had a mammogram before, were more likely to perceive greater benefits of mammography screening and more likely to participate. On the other hand, Routledge et al. (1988) explored factors affecting mammography behaviour in 882 employees at

a medical centre (mean age 49.1) and suggested that women who had had a recent mammogram did not participate in the programme. This could possibly be due to beliefs that one clear mammogram is enough and no more (regular) screening is needed.

It has also been suggested that mammography attenders were more likely to have a regular physician (Rimer, 1992). Having annual check - ups was also found to be positively associated with adherence (Burg et al., 1990). In addition, women who visit obstetricians / gynaecologists (Celestano et al., 1982; Zapka et al., 1989; Burg et al., 1990) and have a regular source of gynaecological care (Fulton et al., 1991) are more likely to obtain mammograms.

In general, it appears that attenders tend to have a pattern of personal health behaviour, which complied with officially recommended health actions (Calnan, 1984), have a general preventive health orientation, report a better health status (Rimer, 1992) and are current oestrogen users (Fullerton et al., 1996). On the contrary, non - attenders tend not to participate in the health care system (Rutledge, 1998).

## **2.6. Screening Mammography Attendance and Knowledge**

Several previous studies have proposed a positive association between knowledge and attendance. Horton and colleagues (1996), in their study of 5,004 British women, aged 65 to 74, suggested that women who do not follow the breast screening guidelines have less knowledge about breast cancer and about mammography as a test and its effectiveness. Also women non - compliant with breast screening recommendations were likely to believe falsely that a mammogram is needed only if a lump is present or if symptoms persist, that, if one had a negative mammogram, there is no need to have

any more and that mammography cannot detect a-symptomatic breast cancer. Fullerton et al. (1996) found that belief in mammography's efficacy was a major motivator for attendance. Similarly, Rodriguez et al. (1995) found that knowledge of the preventive role of mammography was significantly associated with adherence.

Several studies have also found a negative association between non-attendance and low levels of knowledge or negative assumptions about screening. For example, non-attenders are more likely to believe that mammography and check-ups were only needed when someone was sick or had symptoms (French et al, 1982; Maclean et al., 1984; Rimer et al., 1989).

Finally, previous research on knowledge about breast cancer and screening mammography has also: (a) identified deficiencies, distortions and misconceptions in women's knowledge and awareness regarding the above issues (e.g. Leathar & Roberts, 1985; Rimer, 1992; Duke et al., 1994; Skaer et al., 1996) and (b) accounted for differences in knowledge levels (e.g. Owens et al., 1987; Duke et al., 1994; Glanz et al., 1996).

Previous analysis suggests that previous research on knowledge and screening mammography has predominantly focused on identifying deficiencies of women's knowledge and awareness in relation to breast cancer, mammography and screening procedures / recommendations and less on the actual relationship between knowledge variables and attendance. However, those studies, which have emphasised the importance of knowledge in practice of breast screening have not necessarily examined its predictive value (Leathar & Roberts, 1985; Duke et al., 1994). It is also important to point out that different kinds of knowledge or aspects of the same variable were measured across studies. As Vernon et al. (1990) have emphasised in their review of the literature on breast screening participation, even when the same

concept was used, the operational definition differed across studies. Such variability and diversity might account for inconsistencies in findings and consequently comparisons of findings are hindered.

## **2.7. Health Beliefs and Screening Mammography Attendance**

Definitions of the health belief constructs (both generic and specific to the present research) are presented in chapter 4, paragraph 4.3.

There is a large body of literature that has explicitly tested the applicability of HBM to the prediction of participation in breast screening. In several studies perceived severity has not been tested because, according to previous evidence, there appears to be little variability in women's evaluation of the severity of breast cancer (Curry & Emmons, 1994). Stillman (1977) commented that, since most women considered cancer to be a serious condition, that would limit variability of a concept like perceived severity, dampening its effect on other variables. In a critical review of 29 HBM studies by Janz and Becker (1984), published during 1974-1984, severity was the least predictive construct anyway. Similar findings were reported by Fulton et al., 1991 and Rutledge, 1988. Since severity has not been proved to hold predictive power, most research has focused on perceived susceptibility, benefits, barriers and cues for action.

Perceived susceptibility has been related to participation, although some inconsistencies in findings have been reported (Curry & Emmons, 1994). Lerman et al. (1991) conducted a telephone survey of 308 women 50 years old and older approximately 3 months following a mammogram. They found that perceived susceptibility to breast cancer was positively related to mammography intentions. In this study, however, the sample included women with suspicious abnormal as well as



non-suspicious and normal mammograms. In a number of studies, perceived susceptibility was positively associated with breast screening attendance (e.g. Rutledge, 1988; Lerman, 1990; King et al., 1995). However, Bernstein et al. (1994) suggested that susceptibility was not predictive of compliance in their study of 82 hospital employees. Cole et al. (1997) found also a negative association between perceived risk and screening mammography attendance in their study of 407 women over 40 in the USA.

Perceived benefits of screening mammography have been consistently related to attendance (e.g. Rutledge, 1988; Fulton et al. 1991; Rakowski et al., 1992; Bernstein et al., 1994; Fullerton et al., 1996). The most commonly reported perceived benefits across the literature have been: believing in the value of mammogram as a screening test (Rutledge, 1988), "peace of mind", reassurance, preservation of a breast, early diagnosis and treatment (e.g. Price, 1994), perception of mammography as safe (e.g. Fulton et al. 1991), preventive role of mammogram and thinking highly of the screening programme (e.g. Rodriguez et al., 1995).

Curry and Emmons (1994), in their review of 13 selected research studies on the application of the HBM in mammography attendance, concluded that barriers have been found to have a robust relationship with participation. Women who attend for breast screening tend to report fewer barriers (Rakowski et al., 1992; Bernstein et al., 1994; Suarez, 1994; Salazar & Moor, 1995; King et al., 1995; Crane et al., 1996). However, Kreher et al. (1995), in their questionnaire-based study, concluded that geographic barriers (i.e. distance, travel time, transportation) did not affect compliance in a sample of 416 North American women from rural areas, aged 40 or over. Commonly reported barriers have been: fear of pain and radiation, lack of perceived need (Salazar and Moor, 1995; Fullerton et al., 1996), fear of cancer

treatments (Salazar and Moor, 1995), concern over finding cancer and removal of the breast (Crane et al, 1996), embarrassment, accessibility, convenience, difficulty arranging an appointment, difficulties finding the time to attend, anxiety and lack of doctor's recommendation (Lerman et al., 1990), problems with transportation (Crane et al, 1996) and difficulty getting off work (Bernstein et al, 1994).

In the Report of the Second Survey of Women's Views of the Scottish Breast Screening Programme (SBSP) in 1995 (the first took place in 1991), in which 3,500 women (first and second time attendees) participated by completing a questionnaire, respondents identified the lack of space in the mobile vans and the discomfort / pain as the most important barriers / drawbacks of screening mammography. First - time attenders were reported to have experienced more discomfort and pain / pressure than second - attenders (22% and 18% respectively). From the second - time attenders, who also reported less discomfort, 76% attributed this to their previous experience. It was also acknowledged in the Report that severe discomfort or pain is experienced by many women during the examination procedure and that ways of reducing this pain must be found, in order to make the service more acceptable to women (Users' Views: A Report of the Second Survey of Women's Views of the Scottish Breast Screening Programme 1993).

Health motivation has been defined as compliance with a number of health behaviours, e.g. dental check – ups and use of seat belts (Vernon at al., 1990). Such practices have been consistently associated with adherence in breast screening programmes (Vernon et al, 1990; Burg et al., 1990; Rodriquez et al., 1995).

In addition, several cues for action have been found to have an effect on inducing participation in breast screening programmes. Cues for action comprise a variety of possible social influences upon behaviour, ranging from awareness and memory of

mass media campaigns, through leaflets and reminder letters, to descriptive and injunctive social norms from medical professionals and significant others (Sheeran & Abraham, 1996). Thus, having a friend or family member who suffered from breast cancer (King et al., 1995), influence by family / friends and recommendations by doctor (Fulton et al., 1991; Salazar & Moor, 1995) were commonly reported.

The predictive value of the HBM in relation to screening mammography participation has been widely researched (e.g. Calnan, 1984; Aiken et al., 1994). Nevertheless, although many studies have found relationships between the constructs of the HBM and participation in breast screening, the predictive power of these constructs has been rather weak, and often relatively little variance of participation has been explained by HBM variables (Curry & Emmons, 1994).

Curry and Emmons (1994) and Aiken et al. (1994) reviewed 13 and 12 studies respectively on the predictive value of HBM regarding screening mammography adherence with a small overlap. They identified the following theoretical and methodological weaknesses:

- **Measurement limitations.** Single –indicator measures of unknown and possibly low reliability and content validity have been frequently used, theoretically leading to attenuated estimates of relationships. There has also been great diversity in the definition and operationalisation of the health belief constructs (e.g. in Calnan, 1984, barriers and benefits were merged into one single variable) and a lack of standardised instruments for the measurement of the HBM constructs.
- **Limitations concerning sample characteristics.** Samples between and within studies varied widely in age range, race, education and area of living.
- **Limitations regarding the definition of “screening attendance”.** Diversity in definitions across studies could be partly due to the nature of the health belief

variables, which are wide in context. Such broadly defined theoretical components might restrict comparisons between different operationalisations, causing difficulties to the continuity of the research. In particular, the use of the criterion of “ever having had a mammogram” by many studies, in order to distinguish between attenders and non- attenders, might have weakened the results on the association between health beliefs and mammography screening. Women who have had one mammogram in the past, but who have subsequently rejected further invitations, were often placed in the same category as women who are currently fully in compliance with breast screening recommendations. Others studies have used the criterion of “a mammogram within the past year”.

- Personality and psychological / emotional factors have rarely been taken into account in related research with a few exceptions. The proposed mediation of socio-economic influences, cognitive, affective and personality factors in screening behaviour remains rather unclear. In general, research on breast screening, using the HBM as a framework, has been criticised as tending to portray women as a-social economic decision makers and consequently failing to account for the specific behaviour under the social and affective control (Sheeran & Abraham, 1996).

**Table 2.1. HBM – Inspired Studies on Screening Mammography Attendance**

Reference	Study Type	Sample	HBM Constructs	Findings
<b>Calnan (1984) (UK)</b>	Predictors of attendance at clinic providing mammography	854 women from two health districts identified from GP registers, aged 45-64	Perceived vulnerability Perceived costs Perceived benefits Health motivation Social pressure to attend	Overall variance explained by HBM was small. Attenders had higher levels of perceived vulnerability to breast cancer and perceived more benefits and fewer barriers in attending. Health motivation did not predict attendance.
<b>Burack &amp; Liang (1989) (USA)</b>	Predictors of acceptance and completion of mammography	187 African-American women identified during primary care visits	Perceived susceptibility Perceived severity Perceived utility Perceived barriers Behavioural intentions Cues to action	Severity, susceptibility and behavioural intentions did not predict acceptance or completion. Perceived utility and barriers predicted both. Cues to action predicted only completion.
<b>Champion (1991) (USA)</b>	Predictors of participation in mammography	322 women	Perceived susceptibility Perceived benefits Health motivation	Only perceived susceptibility predicted participation.
<b>Fulton et al. (1991) (USA)</b>	Predictors of participation in mammography	852 women	Perceived susceptibility Perceived seriousness Cues for action	Only cues for action predicted mammography participation.
<b>Stein et al. (1992) (USA)</b>	Predictors of participation in mammography / intentions for re-participation in future	1,057 women	Perceived susceptibility Perceived barriers Perceived benefit Cues to action	Perceived susceptibility and cues for action predicted both participation and future intentions. Barriers predicted none. Benefits predicted only future intentions.
<b>King et al. (1994) (USA)</b>	Intervention to increase mammography use	1,524 women, members of Health Maintenance Organisation who did not respond to referral for free mammogram	Stepped cues for action: • 1 <sup>st</sup> reminder letter • 2 <sup>nd</sup> reminder letter • letter urging preventive check-up • telephone counselling	1 <sup>st</sup> reminder letter increased mammography use by 14% of those still non-adherent, 29% in telephone counselling got mammogram compared to 12% in 2 <sup>nd</sup> reminder and 14% in urging letter.
<b>Aiken et al. (1994) (USA)</b>	Predictors of participation in mammography	615 women from women's organisations	Perceived susceptibility Perceived severity Perceived benefits Perceived barriers Cues for action	All HBM constructs predicted attendance except from severity and accounted for 7% of variance beyond other predictors. Cues to action (physician input) alone accounted for 25% of the variance.

## **2.8. The Relationship of Personality and Coping with Screening Mammography Attendance**

To date more emphasis has been placed on the association between stress and cancer, or on coping with the results of a false positive mammogram (Siegler & Costa, 1994). Consequently, research on the association between screening attendance and traditional personality factors has been rather limited. According to some researchers, psychological and personality factors may operate just as an additional barrier for those women who come from lower social classes (e.g. Maclean et al., 1984). Definitions (both generic and specific to the present research) of the personality variables examined in the present review are presented in Chapter 4, paragraph 4.3. General Theoretical Background and Selection of Variables.

Research on Locus of Control and screening attendance is limited and findings are contradictory. Bundek et al. (1993) looked at health locus of control and gynaecological care in Hispanic women (n = 603 age range 55 - 85 or over). A positive relationship was found between powerful others Health Locus of Control beliefs and recency of gynaecological screening, including physician breast examination. In Salazar and Moor (1995) belief in fate (i.e. chance locus of control) was not associated with decision to participate in breast screening in a sample of 36 women over 40 years old. Rothman's et al. (1993) compared the effectiveness of three different types of persuasive messages in increasing compliance with screening mammography, i.e. messages containing internal attributions of responsibility, external attributions or information - only. Their sample consisted of women non-adhering to national guidelines for screening mammography in the USA participated in the intervention (n = 197, aged over 40). Inducing internal attributions of

responsibility was the most effective of all three interventions in changing attitudes screening mammography and in increasing mammography attendance.

Other personality variables examined in relation to breast - screening attendance have been neuroticism and extroversion. Morris and Greer (1982) invited all new patients attending a breast screening clinic during a calendar year to complete the Neuroticism, Extraversion, and Lie scales from the Eysenck Personality Questionnaire and the Spielberger State-Trait Anxiety Inventory. The final sample consisted of 433 women with benign breast disease and 369 women without breast pathology. The two groups did not differ in age, marital status and social class. Scores on Neuroticism and Extraversion were similar and comparable to norms for the British population of the same age. The Lie score was higher for the benign disease patients, but it was not found to influence the Neuroticism scores. There were no group differences on trait anxiety but higher state anxiety scores were found in the benign group. Thus, the authors concluded that a rational appraisal of risk, rather than psychological factors, accounts for breast screening attendance.

Fallowfield et al. (1990) examined psychological factors influencing attendance / non-attendance for breast screening. Although this was not a study on personality as such, the study produced some relevant results. Non - adherent to mammography recommendations women suggested that "they did not want to know if they had breast cancer", which closely resembles avoidance, and "preferred not to think about it", which resembles the definition of denial. The terms "avoidance" and "denial" were not used in the article and researchers did not claim to have measured coping styles. Nevertheless, such findings have highlighted the importance of emotion - focused coping styles for explaining breast - screening participation.

Kreitler, Chaitchik and Kreitler (1990) drew their sample from breast-screening clinics of the Israeli National Cancer Association, where the examination is free and physician referral is not necessary. The sample included 210 self-referred women who attended the clinics and 210 non - attenders. The two groups were compared on 83 variables with significant differences on 50 of them. Attenders were found to score significantly higher on negative emotions and total emotions and lower on positive emotions. In specific, attenders scored higher on repression, positive self – references and alexithymia. They also scored higher on self – references describing oneself in a functional and in a passive way. On the other hand, they scored lower on daydreams, range of self- concept, references to others, negative self - references and in self – references describing oneself in terms of attitudes and appearances. They also scored lower on neuroticism, somatic complaints and health orientation. Alexithymia was defined by the authors as “a trait indexing low emotionality” and literally means “no words for feelings” (Sifneos, 1973). It is an emotional processing deficit believed to be caused by the inability to cognitively represent affective states (Bagby et al., 1994). It consists of difficulty recognising, identifying and communicating emotions, reduced fantasy capacity and an externally oriented cognitive style (Brody, 2003). The findings by Kreitler et al. (1990) indicated that there is a psychological profile of clinic attenders: (a) a salience of dysphoric emotions, (b) psychological disease promotion and (c) defensiveness. According to the researchers this profile is “consistent with the cancer-prone personality, consisting of a repressive style, suppressed emotion and tendency towards dysphoria - especially hopelessness and depression”. Researchers concluded that although fear of detecting cancer may act as a deterrent or motivator for screening attendance, additional psychological factors are also involved.



Decision-making style has rarely been examined as a possible predictor of breast screening attendance. For example, Clark et al. (1998) examined stages of adopting regular mammographic screening in a sample of 1323 women, aged 50 to 74. In that study, however, the focus was on the stage model, which was used as the primary theoretical framework, whereas the aim was to identify correlates of positive decisional balance within each of the four stages of regular screening mammography adoption.

Nevertheless, Siegler and Costa (1994) in their review suggested the following limitations on research on personality and screening attendance. Firstly, measurement of personality was highly variable across studies, ranging from well – known standardised tests (e.g. The Eysenck Personality Questionnaire) to newly developed questionnaires (e.g. the Cognitive Orientation questionnaire constructed by Kreitler et al, 1994). Secondly, different personality variables have been examined across studies, interfering with comparability of results and continuity of the research. The personality variables examined varied from traditional personality traits like Neuroticism or Extraversion to variable psychological factors, like coping. Thirdly, difficulties in defining an appropriate control group, lack of attention to the pattern of mammography behaviour (e.g. history of previous attendance) and problematic outcome variables and variability in conceptualisation of attendance were common in previous research. Finally, lack of a baseline measurement of personality and psychological factors, uncontaminated by the anticipation of and actual participation in the screening process was also evident in relevant research.

## **2.9. A Critique on Studies on Factors of Screening Mammography Attendance**

Studies focusing on identifying factors associated with screening mammography attendance and non-attendance fall into three basic categories: (a) Studies comparing attenders and non-attenders in relation to certain variables and / or examine factors associated with attendance and non-attendance (e.g. Hobbs et al, 1980; French et al., 1982; Maclean et al., 1984; Rutledge, 1988; Eardley & Elkind, 1990). (b) Studies providing descriptive data on adherence with screening programmes / rounds and descriptive data on self-reported reasons for attendance / non-attendance (e.g. McEwan, 1989; Health Educationh Authority, 1989; Baines et al., 1990; Kee et al., 1992). (c) Studies focusing on predicting attendance (e.g. Lerman et al., 1990; Haiart, 1990; Rodriguez et al., 1995; Calnan, 1984).

From this review of relevant studies the following issues could be emphasised:

1. Very few studies have focused on prediction of screening attendance. Most of the previous studies have been predominantly descriptive or have, at most, explored factors associated with attending and non-attending. Five overseas (Lerman et al., 1990; Rodriguez et al., 1995; Crane et al., 1996; Cole et al., 1997; Lechner et al., 1997) and only three UK studies (Calnan, 1984; Haiart, 1990; Sutton et al, 1994) have been found, which have specifically examined prediction of mammography adherence (See Tables 2.2 and 2.3).
2. Methodological differences across studies. Data were obtained by different types of interview, e.g. telephone interview (Crane et al., 1997), personal interview or both (Rodriquez et al., 1995), and different types of questionnaires, e.g. postal (Lechner et al., 1997) or researcher - administered questionnaires (Cole, 1997).
3. Person – based data (collected directly through empirical research) rather than aggregate data (already collected in official databases or records, e.g. Screening Programme databases) were mainly used across relevant (e.g. Roberts et al., 1990).

4. The definition of “attendance” and “non-attendance” and the dependent variable(s) examined varied considerably across studies. Diversity in definition might be partly due to differences in screening guidelines in different health care systems. Other reasons are the differences in the focus and research questions across studies (e.g. Lerman et al., 1990 and Lechner et al., 1997) and in defining attendance (e.g. Rodriquez et al., 1995; Crane et al., 1996; McEwan et al., 1989).

**Table 2.2. Overseas Studies on Predictors of Screening Mammography Attendance**

Reference	Sample	Method	Predictors Examined	Findings
<b>Lerman et al. (1990) (USA)</b>	910 women, aged 50 or over, members of Health Maintenance Organisation 85% response rate	Telephone interview	Health Beliefs Normative influences Knowledge	All variables examined predicted both "ever having had mammography" and "having had a mammography in the past year".
<b>Rodriguez et al. (1995) (Spain)</b>	256 women invited to a first screening, 490 attenders and 150 non-attenders of a second screening, aged 50-70, relatives of municipality employees/retirees	Personal interview for attenders Telephone interview for non-attenders	Knowledge Attitudes Health practices Sociodemographics Family history of BC	Enrolment was associated with cancer preventive practices, previous mammogram, being younger than 55 and family history of BC. Adherence was associated with good opinion of the programme, knowing the preventive role of mammography, regular BSE and being younger than 55.
<b>Crane et al. (1996) (USA)</b>	576 health dept. patients, aged 50 and over, referred for a mammogram 65% response rate	Telephone interview (one year after referral)	Perceived Susceptibility Perceived Severity Perceived Benefits Perceived Barriers Perceived control over getting BC Family's support of mammography Provider-patient communication/rapport	Determinants of adherence included: transportation barriers, fear of immigration authorities, perceived control over getting breast cancer, self-rated health status, age and perceived quality of provider-patient communication.
<b>Cole et al. (1997) (USA)</b>	407 women aged over 40, recruited via the media	Questionnaire	Demographics Beliefs about mammography	Belief in the efficacy of early detection in improving treatment outcome and perceived risk predicted screening practice. Belief that mammography is dangerous or painful did not.
<b>Lechner et al. (1997) (Netherlands)</b>	345 attenders and 453 non-attenders of a Dutch screening programme 58% response rate	Postal Questionnaire	Attitude (perceived consequences/outcome, moral obligation, anticipated regret) Social influence (social support, modelling) Self-efficacy Intention Demographics	Attitude, social influence, self-efficacy and distal variables explained 30 to 45% of the variance in intention to participate in the next screening. Past behaviour and intention were significant predictors of participation in the second screening.

Although much of the research on mammography attendance has been conducted in the USA, research on the UK is also available (See Table 2.3.). In such research:

1. Studies examining predictors of breast screening attendance have usually been descriptive of women's reasons for non-attendance (e.g. Kee et al., 1992). Some simply aimed to record response rates to screening invitation and adherence rates. (e.g. Horton et al., 1996).
2. The range of variables examined in relation to screening mammography attendance has been rather small. Most previous British studies focused mainly (e.g. French et al., 1982; Sutton et al., 1994) or exclusively on describing reasons of attendance and non-attendance (e.g. Kee et al., 1992).
3. The role of personality variables in attendance of breast screening has been grossly neglected in previous research with a few exceptions (e.g. Calnan, 1984 and self-esteem).
4. Knowledge as a factor of screening mammography attendance has rarely been examined. When knowledge was examined, different studies focused on different aspects of knowledge. For example, Hobbs and colleagues (1980) looked at knowledge about cancer. In this study participants' knowledge was assessed regarding the most common cause of death in the UK, the curability of cancer and the value of early treatment for cancer. However, in this study specific knowledge about breast cancer and screening mammography was not assessed. French et al. (1982) assessed knowledge, beliefs and breast disease – related exposure. They specifically explored the following aspects: early treatment and survival, breast lumps as symptoms of breast cancer, pain as a symptom of breast cancer, previous exposure to TV programmes and articles in newspapers / magazines about breast cancer, knowing someone who had had a breast lump. In this study, although knowledge / belief /

experience represented a lot of diverse issues, they were merged into one single variable. Moreover, knowledge about mammography as a test and / or about the screening programme was not assessed.

5. The vast majority of British studies on screening mammography have been a-theoretical. Variables examined were not selected on the basis of a theoretical model and no theory was used as a framework for the interpretation of the findings.

6. HBM constructs were rarely examined in previous research. Even when used, researchers did not mention HBM in their introductions and did not claim to have used it as a theoretical framework for the selection of variables or to have tested its applicability to breast screening attendance with a few exceptions (e.g. Calnan, 1984).

However, even in Calnan's study (1984) perceived costs and benefits were not measured as two distinctive and separate variables but were merged into one.

Moreover, this study has been criticised on the reliability of the scoring method and the content validity of the items (Cooper & Richardson, 1986). Specifically, the merged costs / benefits variable was measured by just 3 items and scores could range from 0 to 3 points.

**Table 2.3. British Studies on Factors of Screening Attendance**

<b>Reference</b>	<b>Objectives</b>	<b>Sample</b>	<b>Variables Examined</b>	<b>Results</b>
<b>Hobbs et al. (1980)</b>	Examining factors associated with attendance Comparing acceptors (= attenders) and rejectors (= non-attenders)	100 invited screened (acceptors), 100 invited un-screened (rejectors) and 50 self-referred women age range = 50-79	Personal characteristics Previous health behaviour Experience & knowledge of cancer	Self-referral was associated with age, higher social class and higher educational levels. Acceptors had previously used other screening procedures and believed that breast cancer is curable.
<b>French et al. (1982)</b>	Comparing attenders and non-attenders	61 attenders 54 non-attenders age range=45-64	Demographic & aetiological factors Aspects of health behaviour Reasons for attending Reasons for non-attendance Fear and anxiety	Attenders saw clinic more positively. Non-attenders were more afraid of cancer being found and more anxious that attendance would be life disrupting. Most women attended either for reassurance or early detection.
<b>Maclean et al. (1984)</b>	Comparing attenders and non-attenders	125 non-attenders 21 attenders age range=45-64	Socio-economic class Health-related behaviour Reasons for non-attendance Views on BC and BSE	Attenders and non-attenders differed in all factors examined. Non-attenders were unsympathetic towards screening and invitation caused considerable anxiety.
<b>Calnan (1984)</b>	Identifying predictors of attendance at clinic providing mammography	854 women from two health districts identified from GP registers, aged 45-64	Socio-demographics Health beliefs State of health Intention to attend Social support Self-esteem	Previous positive health activities, use of preventive health services, certain health beliefs and intentions were predictive of attendance. Intention to attend was the strongest predictor.
<b>Health Education Authority (1989)</b>	Presenting views of attenders and non-attenders	16 attenders 234 non-attenders age-range=45-65+	Beliefs about BC Awareness of breast screening Experience at screen. centre Reasons for attendance/non-attendance Future intentions	Attenders and non-attenders differed in their beliefs and awareness.
<b>McEwan et al. (1989)</b>	Identifying reasons for low rate response to breast screening (descriptive study)	288 women, aged 50-64 invited for screening by letter		Overall response rate was 129 out of 283 (46%) 99 women (35%) did not receive invitation, due to inaccuracies in database 44 (16%) of invitations returned un-opened.

**Table 2.3. British Studies on Factors of Screening Attendance (Continued)**

<b>Reference</b>	<b>Objectives</b>	<b>Sample</b>	<b>Variables Examined</b>	<b>Results</b>
<b>Eardley &amp; Elkind (1990)</b>	Identifying factors associated with attendance	304 women registered with a local GP practice, invited to attend	Response to invitation Reasons for attendance	65% (198) attended, 6% refused, 3% invitations returned undelivered, 26% did not attend. Overall questionnaire response rate 75%. Few practical problems but some negative features of the design of the screening unit and the experience of being screened were identified.
<b>Haiart et al. (1990)</b>	Comparing attenders with non-attenders Identifying predictors of attendance	1301 women aged 50-64 due to be called for their first screening overall attendance 42%	Sociodemographic factors Health behaviours Health status/history Attitudes, beliefs, intentions and worries about BC and screening	Differences in sociodemographics, health – related behaviours and attitudes/beliefs/intentions. Best predictors: perceived importance of regular screening and intentions.
<b>Kee et al. (1992)</b>	Determining reasons for non-attendance	300 attenders 300 non-attenders	Reasons for non-attendance	Most frequently cited reasons for non-attendance were feelings of indifference/ignorance of screening issues and fear of pain/embarrassment. More non-attenders did not have access to a car. Non-attenders were less likely to have had recent cervical smear.
<b>Sutton et al. (1994)</b>	Identifying predictors of attendance for breast screening	3,291 women aged 50-64 due to be called for breast screening for the first time	Sociodemographic factors Health behaviours Other health-related variables (e.g. perceived health, weight) Attitudes, beliefs, intentions (about BC, cervical cancer and screening)	42% overall attendance The best predictors of attendance were perceived importance of regular screening for cervical and BC and intentions. Personal consequences of attending, effectiveness of screening, chances of getting BC and attitudes of significant others were also predictive.



## **2.10. Screening Mammography Attendance and Information Seeking**

Previous research has also examined various information sources in relation to compliance with screening mammography recommendations (i.e. doctor, nurse, mass media and leaflets). Such research is presented below.

### **2.10.1. Health Professionals**

Recommendation by a doctor / GP / physician or other health care provider is an important influence on compliance with mammography attendance, as shown by studies conducted in the USA, the UK and Australia (Lerman et al., 1990; Sobel et al., 1991; Fulton et al., 1991; Howe, 1992; Clover et al., 1991; Rakowski et al., 1992; Rimer, 1992; Duke et al., 1994; Salazar & Moor, 1995; Kreher et al., 1995; King et al., 1995; Horton et al., 1996; Fullerton et al., 1996; Champion & Miller, 1996).

Good patient - doctor communication has also been found as having a positive influence on attendance for breast screening (Maclean et al., 1984; Fox et al., 1991; Shapiro et al., 1992; Favlo, 1993; Facione, 1993; Marshall et al., 1995; Crane et al., 1996).

Another important factor of screening attendance is physician's own attitudes towards mammographic screening. Negative attitudes or concerns on behalf of the physician tend to have a negative effect on women's compliance with mammography. On the contrary, doctor's belief in the importance of mammography tends to increase compliance (Bassett et al., 1986; Fox et al., 1988; Rimer et al., 1989; Austoker, 1994).

Physician's / doctor's attitudes responsible for not recommending mammography to patients include perception of high cost - low yield, fear of radiation, belief that other methods are adequate, lack of awareness of benefits or doubt about effectiveness, and belief that patients will not comply (Bassett et al., 1986; Fox et al., 1988). Several

studies have also shown women's preference for their doctor as the main or only source of information in relation to screening (e.g. Rimer, 1992; Johnson & Meischke, 1993; Danigelis et al., 1995).

More importantly, doctor's contribution to attendance has been shown by some studies to be as equally or more effective than health interventions and education. Clover et al. (1991) have shown that even a simple recommendation by the GP was as effective as an intense health education intervention in increasing mammography attendance. Sharp et al. (1996) also emphasised that a letter from the GP to non-attenders was equally effective with a health education intervention in encouraging screening mammography attendance. Similarly, Sobel et al. (1991) suggested that the motivating impact of the doctor on mammography attendance was more powerful than the health education that women received.

Nevertheless, there have been studies suggesting that doctors' input as information-providers, in relation to breast screening attendance, has been rather insufficient (Johnson & Meischke, 1991; Marshall et al., 1995; Favlo, 1993). In particular, previous research has identified various factors that could inhibit doctors from acting as effective information-providers. Firstly, doctors and other health professionals often have difficulties in handling patients' information seeking demands, particularly those related to personal concerns, and also patients' needs for emotional support (Evans & Clarke, 1983; Freimuth, 1987; Johnson & Meischke, 1991). Secondly, patients may have different expectations regarding various sources of information (Green and Roberts, 1974). Patients have been found as more likely to obtain authoritative professionally-related information from the doctor (Johnson & Meischke, 1993), but do not expect their physicians to be their sole source of emotional support. Patients are more likely to turn to their family and friends for

emotional and moral support (Johnson & Meischke, 1991). In addition, it has been suggested that, even if doctors succeed in providing the necessary information, such information alone may not be enough. Doctors also need to establish communication and relieve concerns by providing reassurance (Favlo, 1993; Austoker, 1994). Furthermore, age and sex of the doctor / GP have an effect on women's attendance and information seeking. It has been shown that women prefer to get screening information from female rather than male doctors, because the former can relate physically, do not violate modesty norms and avoid embarrassment (Marshall et al., 1995). Personality and emotional control (i.e. worries, coping) of the doctor may also have an adverse effect (e.g. Shapiro and colleagues, 1992). It has also been suggested that doctor's knowledge about breast cancer and breast screening is not always as high as expected (Fox et al., 1988). Facione (1993) has suggested that one reason for delay in breast cancer diagnosis is that physical findings other than a lump failed to impress the doctors. Finally, time pressure and limited resources in primary care (Sharp and Power, 1995) might hinder both the establishment of effective communication between GP and women and the provision of reassuring information and support.

It may also be important to note that the main research body has focused on health care professionals or primary care teams in general without specific reference to the role of nurses in breast care. Austoker (1994) reviewed the literature on primary care and the contribution of primary care health professionals to breast cancer prevention. She emphasised the ideal position of the nurse, as a member of the primary care team, to discuss breast screening, especially with non - attenders, provide practical advice, allay fear and answer general inquiries about screening. Nevertheless, in the Duke et al. (1994) study from the 92 participants just 2.6% approached the nurse to obtain information about mammograms compared to 36.4% who approached the doctor.

### 2.10.2. The Media

Evidence on the effectiveness of the mass media in encouraging attendance is rather contradictory. It has been suggested that the media (TV, radio, print media) is a major motivator for mammography attendance (Fullerton et al., 1996). Media has also been shown to be a popular source of information for screening mammography (Duke et al., 1994). On the other hand, there is evidence suggesting the low effectiveness of the media in encouraging attendance (Leathar & Roberts, 1985; Winchester et al., 1988; Rimer, 1992) or its low popularity in comparison to other sources (Johnson & Meischke, 1991; Marshall et al., 1995).

It has been suggested that the mass media holds promise for profoundly influencing health promotion in general. This is because they can reach very large, although diverse and undifferentiated, audiences (Flora et al., 1989). Research concerning media effects on cancer information and cancer screening in general, has shown that especially print media is an important source for obtaining information about cancer (Sackmary, 1989) Individuals, who cite print media as their most useful source of information, are significantly more likely to have heard of cancer screening than those who rely only on their physicians as a source (Meissner et al., 1992). However, several limitations have also been pointed out in the use of print media as a source of information about cancer, breast cancer and screening. Yeaton et al. (1990) examined the ability of 114 college students in Michigan to understand popular periodical reports of health research potentially vital for improved decision making about life style and health care (e.g. articles about surgical alternatives for breast cancer). 39% of the participants misunderstood reports of health research on breast cancer treatment. Moyer et al. (1995), in their evaluation of accuracy and adequacy of 116 popular accounts of research on breast cancer and mammography appearing in

magazines and newspapers during a two-year period, concluded that reported information was of low quality. Newspapers were found to be better in that respect than magazines. However, most newspaper articles had used citations, which could not be traced to the original source and suffered from content-based inaccuracies (i.e. shift in emphasis, erroneous and misleading information, omitting important aspects of research methods, inaccuracies due to lack of direct contact with the researcher). Extreme publicity on breast screening has also been suggested to increase anxiety levels and confusion in women, instead of motivating them to attend. According to Stoll (1991), publicity associated with breast screening has led many women to perceive their personal risk of breast cancer as higher than actually is and to desperately wonder what positive action to take in order to avoid the disease.

The effectiveness of the electronic media (TV, radio) has also been examined and widely discussed. A few studies have presented TV and radio as the most popular information sources amongst women (Duke et al., 1994). Others have suggested either that women do not choose to obtain information from the TV or the radio (Marshall et al., 1995) or that their influence is inadequate to change behaviour toward breast screening (Leathar & Roberts, 1985). Several disadvantages have been identified in relation to using TV and radio to encourage breast - screening. Mass media campaigns, despite their promotional power, tend to leave minorities (e.g. black and Hispanic women), low socio-economic / educational status and older (over 70) women unaffected, failing in influencing mammography uptake in these groups (Vogel et al., 1990; Rimer, 1992).

## Friends and Family

Information from friends and family to breast screening participation has been rather weak one (King et al., 1995). Despite that, friends and family are among the popular information sources amongst women in general (Duke et al., 1995). Most importantly they are perceived by a large number of women as accurate and credible sources. Johnson and Meischke (1993) compared information sources about mammograms (i.e. physician, friends and family, and the media). Participants (n = 209, age range 22-90) gave a relatively high rating to the accuracy of the information about mammography they had received from friends and family (a mean of 5.96 on the 10-point scale). Researchers find this finding disturbing. The fact that patients often rely on family members for medical advice (e.g. uptake of mammograms and breast cancer) could have serious consequences in potentially delaying authoritative treatment and screening programmes and interfere with authoritative advice (e.g. doctor's

use of leaflets as sources information about screening mammography is related to the extent to which leaflets are read and the information they contain (Drossaert et al., 1996). Previous studies, however, have shown that only a proportion of women actually read the leaflets provided to them. Several studies have shown that the information leaflet sent with the screening invitation in countries with a national screening programme (e.g. the Netherlands and the UK) is read by about 60% of the women who receive it (Boer et al., 1996).

In an experimental study by Drossaert et al. (1996) the effects of tailored leaflets on screening mammography re-participation were tested against a standard leaflet in a sample of 2,961 women. The standard information leaflet was developed by the Dutch Cancer Society and is enclosed with every invitation for the Dutch screening programme. It contains information about breast cancer, the benefits of early detection and the screening programme. The tailored leaflet was aimed at establishing or maintaining positive attitudes, positive social norms and high self-efficacy expectations with respect to repeat participation to the screening programme. Two versions of the tailored leaflet were made: a simple version and a version with additional peripheral cues. It was found that tailored information leaflets failed to enhance re-participation. A relatively large group did not completely read the tailored leaflet. Such results suggest that leaflets, although cost-effective, have questionable power in enhancing screening mammography re-participation.

Previous analysis on information sources for breast screening attendance lead to the following conclusions:

1. Results on information sources chosen by women for breast screening are rather inconsistent. Inconsistency could be due to differences in information seeking according to age, socio-economic background and different expectations of women from different type of sources (Green & Roberts, 1974; Winchester et al., 1988; Danigelis, 1995).
2. The role of personality and health belief constructs as predisposing factors to the choice of certain sources and their influence on quantity and quality of the acquired information and knowledge has rarely been examined. Meischke and Johnson (1995), for example, investigated the relationship of the core HBM variables on the selection of 5 information sources on breast cancer detection (i.e. doctors, organisations, friends

and / or family, TV and magazines) (317 women, age range 18-76). It was found that women, who felt more susceptible to a late diagnosis of breast cancer and perceived more benefits and fewer barriers towards information-seeking, were more likely to seek information from doctors or other health care professionals. Women of higher education, who perceived breast cancer as a severe disease, were more likely to seek information from health organisations. Younger women (under 35), who, due to their age, had limited personal experience with some screening methods for early detection of breast cancer (such as mammography), had experienced breast symptoms and had someone with cancer in their social environment were more likely to seek information from friends / relatives. Those who had someone with cancer in their social environment, perceived breast cancer as a serious disease and had lower barriers to seek information, preferred magazines. In general, perceived barriers and benefits of information - seeking were shown important for differentiating seekers from non-seekers for authoritative sources (e.g. doctors).

### **2.11. The Contribution of the Present Research**

Taking into account the issues arising from previous research on screening mammography attendance and especially UK-based studies in the area, the contribution of this part of the thesis could be summarised in the following:

1. International and British research on screening mammography attendance has rarely focused on predicting the behaviour. On the contrary, the main aim of the present research will be to investigate predictors of attendance.
2. From the UK studies on breast screening attendance a few have included personality variables and health beliefs as possible predictors of mammography



attendance (e.g. Calnan, 1984). In the present research both health – related personality factors and health beliefs will be examined as predictors of attendance.

3. As opposed to previous relevant studies, the present research: (a) will include variables for all the previously widely researched groups of variables (i.e. demographics, health history, knowledge, health beliefs and personality), (b) will examine the association of those variables with breast screening attendance and (c) will investigate their predictive value to screening attendance both as individual predictors and as a group. Such an approach facilitates testing various associations in a single study.

4. Knowledge was rarely examined as a factor associated with screening attendance and, when it was, measurement has been rather general (e.g. Hobbs et al., 1980) and non-specific to breast screening (e.g. French et al., 1982). In the present research knowledge will be assessed as a distinct variable, consisting of both general (knowledge about breast cancer, i.e. factors that may increase the risk for developing the disease, prognosis of breast lumps, age when breast cancer risk increases substantially) and screening-specific dimensions (i.e. knowledge about the effectiveness of mammography).

5. Previous research on screening mammography attendance in Britain, with few exceptions (e.g. Calnan, 1984), has neglected the role of health beliefs. In the present research health beliefs (i.e. perceived barriers and health value) are included as possible predictors of the behaviour. The reason for choosing only barriers from all the health belief constructs was based on the fact that barriers have been found to have a more robust relationship with participation in breast screening than other health belief constructs (Curry & Emmons, 1994; Bernstein et al., 1994). Health value is also included, because, according to previous evidence, it can mediate the relationship

between personality factors and practice of breast care behaviours (Lau et al., 1986). Health value has not been examined as a possible predictor of breast screening attendance before either in the UK or internationally.

6. Although the vast majority of British studies focused on “reasons of attendance / non-attendance”, none of the studies actually measured perceived barriers as a HBM variable. On the contrary, in the present thesis, perceived barriers towards screening mammography attendance are measured as a theoretically distinct health belief construct, as defined by Becker et al. (1977b). This decision is based on evidence that barriers and benefits are not only separate entities, but also negatively associated to each other (Lerman et al., 1990; Rakowski et al., 1992; Fullerton et al., 1996).

## **Chapter 3: Breast Cancer Surgery / Mastectomy: A Review of the Literature**

### **3.1. Introduction**

Breast cancer (BC) is the most widely studied type of cancer, regarding its psychological impact (Rowland & Holland, 1989). This is so because BC is one of the most common cancers among women in the European Community as well as in other industrialised countries, such as the USA and Canada (Eurostat, 1995a). BC also affects an organ that is intimately associated with self – esteem, sexuality and feminine social stereotypes and roles (i.e. breast – feeding, motherhood, fertility and femininity), which are considered as psychosocial issues of paramount importance for all women. There has also been evidence, as presented below, suggesting a link between psychological factors and survival in breast cancer patients and this adds to the significance of psychological research in the area.

### **3.2. Psychological Factors and Breast Cancer: The Link with Survival**

Awareness of the role that psychological factors could play in the course of cancer was one of the early cornerstones of psycho-oncology (Watson, 1988; Holland, 1991). A large body of research explored the relationship between psychological factors (i.e. personality, coping, mood and psychosocial intervention) and the onset and progression of cancer. The main areas investigated were: psychosocial factors and prolonged survival, psychosocial factors and the immune response, the effects of psychosocial interventions on the immune system in patients with cancer, psychosocial factors and response to treatment. Research that addressed these areas are presented below.

### **3.2.1. Psychosocial factors and Survival in Patients with Cancer**

Pettingale and colleagues carried out a series of studies in the UK. In the Pettingale et al. (1981) study the correlations between biological measures made pre-operatively and concurrently with psychological assessments were studied. A total of 62 consecutive patients with early breast cancer were studied for 5 years. Psychological responses (i.e. denial, fighting spirit, stoic acceptance or hopelessness / helplessness) to the diagnosis were assessed 3 months post-operatively and correlated with various histological, mammographic, hormonal and immunological investigations performed preoperatively and 3 months later. There was no association between psychological response and any of the biological measures. However, 3 months after the operation serum levels of immunoglobulin (IgM) were significantly higher in patients who showed denial than in those with fighting spirit or stoic acceptance. Patients, who showed fighting spirit, had significantly lower levels of IgM than those who showed stoic acceptance. Nevertheless, the link between IgM levels and survival remains hypothetical. In fact, these coping styles cannot be directly linked to length of survival on the basis of these results.

Pettingale and colleagues (1984, 1985) studied psychological responses of 69 women after a diagnosis of breast cancer 3 months post-operatively. Survival outcome 10 years after their operation was also studied. At the 10 – year assessment point post-operatively, survival was greater in women who showed either denial or “fighting spirit” (55%), as compared to those who exhibited “stoic acceptance” or feelings of hopelessness or helplessness (22%).

These findings replicated earlier results by Greer, Morris and Pettingale (1979), where the same coping strategies were related to longer recurrence – free survival. However, similarly to the Pettingale and colleagues studies, certain prognostic factors, e.g.

axillary lymph node and oestrogen receptor status, could not be controlled. These measures had not been assessed on a routine basis at the time of diagnosis (Faller, 1997).

On the contrary, Derogatis and colleagues (1979) found a positive correlation between survival and expression of negative emotions in women studied from the time of chemotherapy initiation. Long-term survivors (those who survived for more than a year) showed more negative emotions, higher levels of anxiety, depression and hostility than those who survived less than 1 year.

Dean and Surtees (1989) interviewed 122 women with primary operable breast cancer before and 3 months after mastectomy. They also assessed survival outcome 6-8 years after operation. Measures included the Present State Examinations, the Eysenck Personality Inventory and the General Health Questionnaire. Patients who fulfilled the criteria for a psychiatric condition pre-operatively were less likely to have a recurrence during follow-up. Patients, who used denial as a coping strategy, had a better chance of remaining recurrence-free than patients employing other coping strategies at 3 months post-operatively. Psychological factors were stronger predictors of recurrence-free survival than other prognostic factors (i.e. histological node status, tumour size and treatment).

Gilbar (1996) interviewed 40 breast cancer patients (Stages I and II). Eight years later 8 out of 40 women had died in the intervening period of time, another 7 had developed bone metastases and the remaining 25 had no clinical evidence of the disease. The main findings of this study indicated that psychological distress, anxiety, hostility, paranoid ideation and psychoticism, as well as the Global Severity Index (GSI) scores, of the eight patients who died were more severe at the time of diagnosis than that of the patients who survived.

In Butow et al. (2000) a total of 99 patients with metastatic breast cancer completed questionnaires measuring cognitive appraisal of threat, coping, psychological adjustment, perceived aim of treatment, social support and quality of life approximately four months after diagnosis. Survival was measured from date of study entry or censored at the date of last follow-up for surviving patients. In a multivariate analysis four factors were found to predict survival independently. These were: Patients with metastases in the liver, lung or pleura survived for a shorter duration. Older patients, those with a better appetite also lived for a shorter time. Patients who minimised the impact of cancer (minimisation as coping strategy) survived longer.

Gorzynski and colleagues (1980) conducted a survival follow-up study of 30 women with breast masses. Women were assessed psychologically (by semi-structured interviews and the Katz Defensive Adequacy Scale) and endocrinologically (cortisol excretion levels were measured) prior to biopsy and 10 years later. Women who were alive at 10 years were compared to those who had died in the interim with respect to pre-biopsy characteristics. Psychological state was not significantly different between the groups, but mean body weight of those who had died was significantly higher than that of survivors.

Marshall and Funch (1983) examined the association between survival, social stress and social involvement in a sample of 352 women with breast cancer. The relationships between stress and survival were examined in 3 age groups: 15-45, 46-60 and 61 or over. Social stress was consistently found to have an adverse effect, whereas involvement with others was positively related with length of survival in the youngest group.

Cassileth and colleagues (1985) tested the ability of seven psychosocial factors (i.e. social ties, life satisfaction, job satisfaction, use of psycho-tropic medication,

subjective view of adult health, hopelessness or helplessness and perception of adjustment) to predict survival. Two groups of patients were followed: those with irreversible cancer (n = 204), who were followed until death, and those with stage II breast cancer or melanoma (n = 155), who were followed to disease recurrence. Neither of the factors examined, either alone or in combination, was found able to predict survival or recurrence.

However, it is important to note that most investigations, carried out before the 1990s, on the association between psychological factors and survival suffered methodological limitations. These are: (a) use of multiple retrospective tests instead of testing a priori hypotheses, (b) lack of prospective designs to prevent psychological predictors from turning out to be simply indicators of the somatic state of the patient, (c) lack of a multi-method and longitudinal assessment of coping and adaptation, (d) lack of homogeneous samples, (e) not taking into account in a single study biological factors documented as important by previous research (e.g. lymph node status and oestrogen receptors), (f) lack of multivariate statistical analysis in many studies (Faller, 1997), (g) lack of a baseline measurement of psychological factors uncontaminated by the knowledge of a breast cancer diagnosis or even the experience of breast symptoms.

### **3.2.2. Psychosocial factors and Immune Response**

Since the 1990s, research in psychooncology has attempted to tackle the above methodological limitations. Greer (1999) reviewed recent studies on possible links between psychosocial factors and cancer outcome. He suggested that the biomedical model, although successful in advancing the knowledge of pathogenesis and treatment of the disease, yet it does not fully explain the progression of cancer. Evidence shows an association between a hopeless / helpless coping style and unfavourable outcome

in certain types of cancer, including breast cancer. Findings regarding the effects of fighting spirit are far less conclusive. There is also evidence that hardiness and resilience offers protection against physical illness. A number of psychooncology studies show regulation of the immune system by the central nervous system, including mitogen-induced lymphocyte proliferation and natural killer cell activity. However, it needs to be noted that the link between psychological stance and course of cancer is mainly supported with respect to certain early stage non – metastatic cancers.

Commenting to Greer's review, Walker (1999) admitted that psychological factors have been shown to be independent prognostic factors of survival in certain cancer studies. He points out that that severe depression is shown as being more immunosuppressive than milder depression. However, this does not imply that psychiatric diagnostic criteria, which predict antidepressant drug responsiveness, will also predict effects on host defenses. In a similar respect, evidence supporting a link between psychological factors and immune system, does not necessarily suggest that psychological factors can directly affect survival by altering immune responses. This argument is further supported in Walker et al. (1999) paper, where evidence on the relationship between psychological factors and the onset and progression of cancer was reviewed.

### **3.2.3. Psychosocial Interventions in Patients with Cancer: Immune Responses, Survival and Response to Treatment**

There has been accumulating evidence that psychosocial interventions not only improve quality of life but also prolong survival in various types of cancer (Weeks, 1992; Ratcliffe et al. 1995; Coates et al., 1997). Beneficial effects of psychosocial interventions on survival have been demonstrated by a number of studies (Fawzy et



al., 1995; Spiegel et al., 1989). Fawzy and Fawzy (1994) for example evaluated the effect of a structured psychoeducational intervention, including health education, stress management and coping skills training, on malignant melanoma patients. The intervention group (n = 38) had a lower recurrence rate and better survival rate than the controls (n = 28).

Psychological factors may affect survival through a number of mechanisms, such as enhanced treatment compliance, better nutrition, a reduction in high – risk behaviours, alterations in coping strategies, improved quality of life, provision of social support and direct effects on response to treatments. For example, in patients who underwent chemotherapy, Fraser et al (1993) found that quality of life at trial entry predicted response to chemotherapy and subsequently survival. Nevertheless, as claimed by Walker et al. (1999), although psychosocial intervention can alter host defenses, the clinical relevance of these changes in patients with cancer is still unclear. For example, Fawzy (1994) found that higher levels of natural killer cells (NKC) activity predicted lower rate of recurrence but were not predictive of survival. In specific, at the end of a brief (6 weeks) psychological intervention on malignant melanoma patients, there was an increase in suppressor T- cells but no other significant changes. At 6 months follow – up the number of natural killer cells (NKC), the percentage of large granular lymphocytes (LGLs) and the cytotoxicity all increased, whereas helper T-cells (CD4) decreased. It was also found that the larger the decrease in depression and anxiety rating at 6 months, the larger the increase in LGLs and cytotoxicity.

Cunningham et al. (1998) randomised 66 women with metastatic breast cancer to 35 weekly sessions, consisting of two groups: support and cognitive behaviour therapy versus a home-based cognitive behavioural package. No significant differences between the two groups in survival were found at 5-year follow-up. This suggests that

both interventions may have been effective in enhancing survival (Lewis et al., 2002). Non-inclusion of a no-intervention control group was a major limitation of this study. Goodwin et al. (2001) examined the effect of three types of intervention on survival, mood and pain of 235 women with metastatic breast cancer. The interventions compared were supportive – expressive group therapy alone, supportive – expressive group therapy plus routine care and routine care alone. Psychological factors were assessed by self-reported questionnaires. Patients in the intervention group showed a greater improvement in psychological symptoms and reported less pain than patients in the control group. Although the intervention did not prolong survival, it did improve mood and perception of pain, particularly in women who were initially more distressed.

In a randomised control trial, Walker and colleagues (1999) evaluated the effects of relaxation training and guided imagery on quality of life and on response to primary chemotherapy in 96 women with locally advanced breast cancer. Patients were randomised following diagnosis to an experimental group (standard care plus relaxation training and imagery, n = 48) and a control condition (standard care, n = 48). The groups did not differ on clinical and pathological response to chemotherapy. However, mood disturbance prior to chemotherapy was an independent predictor of both clinical and pathological response to primary chemotherapy. Pathological response to chemotherapy was independently predicted by tumour size and depression (as assessed by the HADS). It was also found that relaxation and imagery was associated with increased in number and percentage of mature T-cells, lowered circulating levels of tumour necrosis factor alpha and increased lymphokine - activated killer (LAK) cell cytotoxicity. Although the two groups did not differ in NK-cell cytotoxicity, self – rated imagery quality was highly correlated with natural

cytotoxicity and with clinical response. Despite changes in quality of life and immune response, at 70 months follow-up, there was no significant difference in survival between the two groups. Moreover, survival was independently predicted only by tumour size and change in the number of CD56<sup>+</sup> cells during chemotherapy.

Anderson and Walker (In Lewis et al., 2002) in their review of randomised controlled trials on psychological interventions and survival identified a number of methodological and theoretical weaknesses: (a) Small samples. (b) Treatment, patient and disease heterogeneity. (c) Short follow - ups. (d) The possibility that interventions may affect survival through a number of different mechanisms, e.g. compliance with complementary therapies, promotion of a healthy lifestyle, direct effects on the tumour itself through psychoneuroimmunological pathways or by reducing incidence of septic complications. Because of the above weaknesses the effect of psychological interventions on survival remains unclear. It might be that survival is only affected in selected individuals. Future research should identify which patients (personality, coping, mood) with which disease – related factors (type and stage of cancer) benefit from which psychosocial intervention (supportive – expressive, relaxation, imagery etc.).

Previous analysis suggests the following:

1. The evidence about likely effects of psychological factors on survival and related variables, such as natural killer (NK) cell activity (Levy et al., 1987) merely implies that the set of determinants of survival is probably broader than initially assumed in a purely medical framework (Kreitler et al., 1997).
2. The association between psychological factors and survival might be an indirect one, through change in health behaviour, compliance with health – related guidelines, treatment and quality of life (Walker et al., 1999).

Finally, previous analysis has highlighted inadequacies of existing models (e.g. the biomedical model) to explain cancer progression and the psychological and other processes involved. Hence, the model for cancer progression, which puts forward a cognitive – behavioural view of cancer progression, will be briefly presented as follows. Psychological factors might influence survival through psychosocial, biological and behavioural pathway. The model highlights a number of factors, important in understanding cancer progression: ongoing appraisal of the situation, physiological aspects (stress response), affective responses (depression, anxiety, happiness), coping styles (e.g. fighting spirit, hopelessness), perceived self-efficacy (i.e. belief that one can control the outcome) and behavioural aspects (treatment compliance, lifestyle changes, relationship with health professionals and use of complementary therapies). These factors are influenced by personality variables (extraversion, neuroticism, emotional suppression and social conformity) and social support (Lewis et al., 2002). The cognitive – behavioural model provides a more global description of the different factors affecting the progression of cancer and their interactions. More importantly, it comprises an organised framework for the interpretation of findings on the relationship between psychological factors and survival.

### **3.3. Psychological Implications of Breast Cancer and Mastectomy**

According to previous literature, breast cancer and its treatment brings change in a number of areas of human life and function. Those areas are examined briefly below:

#### **3.3.1. Psychological distress and Breast Cancer**

Previous research estimated that 25-30% of women who undergo mastectomy experience sufficient distress to require psychiatric evaluation (Morris et al., 1977;

Jamison et al., 1978; Malec et al., 1988). Psychiatric conditions reported after a mastectomy included reactive anxiety and depressive disorders for 18 – 39% of patients. Nevertheless, these conditions appear to be temporary for 84% of women, who return to normal employment and everyday functioning within two years of surgery (Scohottenfeld & Robbins, 1970; Rowland & Holland, 1989).

### **3.3.2. Treatment Side Effects**

Physical discomfort in breast cancer patients is generally linked with side effects caused by surgery, chemotherapy, radiation and hormonal treatments. Surgical intervention is usually associated with pain, muscle weakness, heaviness, stiffness, impaired shoulder motion, decreased activity level, numbness, tingling and anaesthesia of the affected arm(s) and chest wall, lymphoedema (i.e. swelling, due to damage to lymphatic ducts, caused by extensive breast surgery), phantom breast sensation and tenderness of the operated area. Many women reportedly experience difficulty in returning to usual household chores and inability to work (Morris et al., 1977; Meyerowitz, 1980).

In general, chemotherapy can result in hair loss, nausea, vomiting, diarrhoea, food aversion, appetite loss and weight changes (Walker et al., 1997), fatigue (Sadler and Jacobsen, 2001), respiratory distress (White et al., 1984; Stroemgren et al., 2001), anaemia (Queirolo et al., 1991; Danova & Ferrari, 2002; Tas et al., 2002) and immunomodulation (Stockhorst et al., 1998).

One of the most common side effects is hair loss. Chemotherapy – induced alopecia can range from sporadic thinning of the hair to complete baldness. Several factors may contribute to the severity of hair loss including drug, dose and schedule as well as hair care practices (Batchelor, 2001). Alopecia has been cited as the most disturbing anticipated side effect by up to 58% of women preparing for

chemotherapy, with 8% being at risk for avoiding treatment because of this. Women with cancer, who experience alopecia as a side effect, compared to those, who do not report lower self - esteem, poorer body image and lower quality of life (McGarvey et al., 2001). In those women possibly hair loss is associated with loss of attractiveness, individuality, a state of disgrace and illness, in addition to the ageing process, death and loss of sexuality (Batchelor, 2001).

Severe nausea and vomiting caused by some chemotherapy drugs, such as cyclophosphamide - based, can adversely affect quality of life, especially as some of these drugs are often given on an outpatient basis over several courses (Clavel et al., 1993). It has also been shown that breast cancer patients undergoing adjuvant or neoadjuvant chemotherapy gain weight, whereas metastatic patients loose weight during palliative chemotherapy (Costa et al., 2002). There is also evidence that chemotherapy may result in impaired cognitive function, sometimes even years after completion of therapy (Grober, 1992; Schagen et al., 1999; Phillips and Bernhard, 2003). Relevant studies describe a subset of approximately one-third of cancer patients who experienced broad and long-term cognitive impairment after chemotherapy (Olin, 2001). Impairment may affect short and long – term memory, visual memory, attention span, concentration, language skills, mental flexibility, speed of information processing and motor function have been reported (Schagen et al., 1999; Olin, 2001).

Radiation has also common side effects such as skin changes, i.e. reddening, irritation, tanning, sunburn (Huang et al., 2002), fatigue (Sadler & Jacobsen, 2001), loss of appetite, lowered blood counts (anaemia). An increased risk of developing secondary cancers, e.g. lung cancer, after radiation therapy for breast cancer has also been reported (Rubino et al., 2002).

Fatigue during or after treatment is a side effect of either chemotherapy or radiotherapy. It has been associated with changes in mood and quality of life in cancer patients in both treatment modalities (Nail & King, 1987; Winningham et al., 1994; Barnish, 1994; Pater et al., 1997; Visser & Smets, 1998).

Another treatment modality used for breast cancer is hormonal therapy. Older hormonal therapies, such as progestins and selective oestrogen receptor modulators (e.g. tamoxifen), tend to produce more adverse effects than newer ones, such as aromatase inhibitors and oestrogen receptor antagonists. The purported toxic effects of tamoxifen therapy include premature menopause, weight gain and depression. From randomised controlled trials on adjuvant therapy, it is known that tamoxifen therapy increases the rate of hot flashes, night sweats and vaginal discharge. However, in observational studies these symptoms do not seem to have a statistically significant impact on patients' quality of life as measured by standardised, self-report questionnaires (Constantino, 2002). The Breast Cancer Prevention Trial found no evidence of excessive rates of depression or clinically significant differences in sexual functioning between women receiving placebo and those receiving tamoxifen. Nevertheless, there are several serious medical risks from tamoxifen therapy, e.g. uterine cancer, blood clots, stroke and cataracts (Assikis & Jordan, 1995). But there are additional benefits from tamoxifen therapy in relation to an increase in disease – free and overall survival rates, including a decrease in contralateral breast cancer and fractures (Ganz, 2001).

Patients may also report other physical and / or psychosomatic symptoms not directly related to cancer and its treatment. These are generally acute and episodic and may include headaches, stiff neck, hives, insomnia (Scott & Eisendrath, 1985-1986),

recurrent nightmares (Anstice, 1970a), loss of appetite (Bard, 1970), inability to concentrate and tearfulness (Anstice, 1970b).

### **3.3.3. Marital and family disruption**

Breast cancer has been found to have a profound effect on marital and family relationships (Lewis and Bloom, 1978-1979; Wellisch et al., 1985; Lewis, 1986). Social, financial, vocational and educational goals may have to be disrupted or altered, placing stress on the entire family unit (Ingram, 1989). As a result, breast cancer has often been called a “family disease” (Cassileth & Hamilton, 1979; Kaplan, 1982). Husbands of women with breast cancer have been found to suffer adverse and sometimes serious physical, psychological and psychosomatic reactions to the process of diagnosis and treatment (Schain, 1976; Wellisch et al., 1978; Northouse & Swain, 1987). Several studies have suggested that male partners of women who had undergone mastectomy were sexually less satisfied with their partners following surgery. They were unsure of how to care for and love their partner when she was ill. Baider and Kaplan De - Nour (1988) reported that sexually – related concerns and adjustment difficulties for men were almost as numerous as for the women. A lot of women reported a loss of sexual interest following breast surgery (Downie, 1978; Metze, 1978; Cassileth & Hamilton, 1979). Breast cancer has also been found to disrupt the mother - daughter relationship (Lichtman et al., 1984).

### **3.3.4. Sexual difficulties and issues with body image and appearance**

Sexual difficulties are inevitably associated with changes in body image and appearance concerns. The negative impact of mastectomy on body image has been well documented in previous research (Polivy, 1977; Bloom et al., 1987; Mock, 1993). Body image is, in general, a far more important part of self – image in women than it is for men (Margolis & Goodman, 1983). The breast constitutes an important



part of the female body image. It is a symbol of femininity and closely associated with attractiveness and sexual desirability. In addition, it is further seen as a symbol of motherhood (Margolis & Goodman, 1983; van Brederode, 1978). Hence, many women, who have undergone mastectomy, fear that they have become unattractive to their partners, or men in general, they feel ugly, mutilated and unwanted (Cassileth & Hamilton, 1979; Downie, 1978; Maguire, 1978; Meitze, 1978). Hiding their breasts from their husbands, refusing to undress in front of them, or even discuss the cancer, their breasts, and their feelings about the surgery and its consequences and avoiding to sleep in the same bed with their partners after breast surgery are some of the behaviours exhibited by a number of women, who had undergone mastectomy (Ingram, 1989).

### **3.3.5. Social and financial difficulties**

Breast cancer may affect social relationships and even result in social and emotional isolation (Lewis & Bloom, 1978-1979; Wellisch et al., 1985; Lewis, 1986). It has been reported that approximately one third of breast cancer patients do not feel they have adequate social support (Peters-Golden, 1982; Royak-Schaler, 1991). Breast cancer, as much as AIDS and prostate cancer, is considered a stigmatising illness (Davison et al., 2000). It has also been reported that breast cancer patients are often exposed to ambiguous and negative social feedback, including mixed feelings of fear and dislike, pity and sympathy. Such social reactions undermine patients' self-esteem and aggravates the already existing illness – related stress (Coates et al., 1979; Wortman & Dunkel-Schetter, 1979; Zemore & Shegel, 1989). Additionally, due to the cost of the treatment or inability to work for the patient and / or her carers, financial resources may become depleted. Financial hardship, as a result of breast cancer, has

been cited as a major factor in the psychological deterioration of the patient and the family (Fobair & Cordoba, 1982).

### **3.3.6. Fears and concerns**

There has been evidence regarding fears that are normally aroused because of breast cancer diagnosis and treatment (Meyerowitz, 1980). The fears most commonly mentioned in the literature are the fear of recurrence, the fear of need for further treatment (Robbins, 1973; Schain, 1976), concerns about mutilation caused by breast surgery and loss of femininity (e.g. Robbins, 1971; Schain, 1976; Ray, 1978) and the fear of death (Goldsmith & Alday, 1971).

## **3.4. Correlates of Adjustment to Breast Cancer and Mastectomy**

A number of factors have been associated with adjustment to breast cancer and mastectomy, described as follows:

### **3.4.1. Socio-Demographic Factors**

There is limited evidence that socio-demographic factors influence adjustment to diagnosis and treatment for breast cancer. A few studies have found that age at diagnosis affects psychological distress, but results across studies are conflicting (Glanz & Lerman, 1992). Northouse & Swain (1987), who compared psychosocial adjustment of 50 newly diagnosed breast cancer patients and their husbands at two time points (3 days after surgery and 30 days later), have suggested that the younger the participants, the more likely they were to have experienced distress. Similarly, Hilton (1989) found that fear of recurrence increased with age. Vinokur and colleagues (1990) examined the effects of gender, age, marital satisfaction and physical impairment on patterns of giving and receiving social support and social undermining (e.g. personal criticism) in 431 married couples, in which wives were

aged 43 to 84 years. The wives were long – term survivors of breast cancer, asymptomatic controls or had recently been diagnosed with breast cancer. It was found that younger rather than older patients (still in reproductive age) viewed breast cancer as a greater threat to their future lives. Younger patients also manifested poorer mental health than older patients.

Other factors have also been found associated with adjustment to breast cancer. Cobliner (1977) conducted personal interviews with 300 women, who had been or were being treated for early stages of gynaecological or breast malignancies. Data were obtained on factors of successful psychosocial adjustment. Results indicated that involvement in satisfying employment was related to adjustment. According to Bloom et al. (1992), social status, although not directly related to the adjustment process, has been found indirectly related, because it is often an indicator of the availability of other resources, e.g. social support and information. Bloom (1982) assessed 133 former breast cancer patients (mean age 51 years), using measures of social support, adjustment and demographic variables. Hardly any evidence was found on the effects of race, marital status or educational level on adjustment. According to Glanz and Lerman (1992), who reviewed the literature on the psychosocial impact of breast cancer, the lack of such evidence may reflect selection bias rather than the unimportance of those factors. In particular, samples used in research on adjustment tended to be homogenous, featuring the profile of a white, middle class woman in her early to mid-fifties, married with two children.

#### **3.4.2. Illness indicators / Medical factors**

Illness indicators are defined as clinical factors that determine breast cancer as a biological entity, e.g. lymph node involvement and type of breast cancer operation. Psychosocial adjustment of patients with breast cancer has been found dependent on

the stage of breast cancer found at diagnosis, the treatment required and prognosis (Rowland and Holland, 1989). Stage of the disease and nodal status are commonly considered as having the highest diagnostic and prognostic value (Osteen et al., 1986; Henderson et al., 1989; Rowland & Holland, 1989; Friedman et al., 1989).

Another medical factor examined in relation to psycho - social adjustment is the impact of the type of breast surgery (i.e. how invasive or breast conserving the procedure was). A number of studies in this area have operated from the underlying hypothesis that breast - conserving types of surgery can reduce emotional distress associated with the loss of a breast (Royak-Schaler, 1991). In previous research comparing the psychosocial consequences of radical versus breast - conserving surgery there is an overall agreement on the following issues: Firstly, women who undergo any type of breast surgery experience considerable distress. Secondly, research focusing on the impact of breast-conserving and restoring procedures on women's adjustment has suggested that, although breast - conserving procedures diminish the loss of breast tissue, patients still present with different but equally difficult psychological issues (Rowland & Holland, 1989). Although there has been evidence that breast - conserving surgery improves patient's quality of life after surgery, patients who have opted for less invasive procedures often display higher levels of anxiety, associated with their fear of incomplete excision and the recurrence of cancer (Fallowfield et al., 1986,). Ganz et al. (1987) for example examined the physical, psychological, social and financial problems identified by 50 patients, aged 26 to 75, during the first month after primary surgical treatment. Among the 50 patients, 31 had undergone modified radical mastectomy and 19 a segmented mastectomy and primary radiotherapy. They found that both groups had experienced similar physical and psychological problems. However, while the mastectomy group

had more difficulty with self – image and clothing, the limited resection group reported more problems with disrupted social and recreational activities.

### **3.4.3. Personality and Coping as Factors of Breast Cancer Adjustment**

Definitions (both generic and specific to the present research) of the personality variables examined in the present research are presented in Chapter 4, paragraph 4.3.

#### **General Theoretical Background and Selection of Variables.**

It has been claimed that at least 50% of the variance in adjustment to cancer and breast cancer in particular could be explained by non-medical intra-individual variables (i.e. coping strategies, resolution of problems, vulnerability to stress, total mood disturbance, predominant concerns). Weisman and Worden (1976-1977) in a sample of 120 newly diagnosed cancer patients tested psychological factors by using the Profile of Mood States, the MMPI, the TAT and especially devised scales. Participants were followed from about 10 days post-diagnosis at 4-6 week intervals until 3-4 months post-diagnosis. Regardless of prognosis or site of cancer, good copers were characterised by high resolution, low vulnerability, low mood disturbance, while patients who had higher emotional distress after diagnosis were observed to have regrets about the past, were pessimistic, came from a multi-problem family and has had marital problems.

Personality traits have also been examined as possible predictors of adjustment to breast cancer and its treatment (Irvine et al., 1991; Glanz & Lerman, 1992). Lower neuroticism (Morris et al, 1977; Jamison et al., 1978) scores were found associated with less distress two years after mastectomy, and better emotional adjustment (Jamison et al., 1978). Nevertheless, several of the studies investigating personality traits and adjustment have not controlled for confounding variables. On the other hand, they used poorly defined outcome criteria (Glanz & Lerman, 1992).

Previous research on coping strategies in breast cancer has shown that most patients use multiple coping modes and that coping processes change over time (Gotay, 1984; Heim et al., 1987; Grassi & Molinari, 1988; Hilton, 1989). Research on coping strategies and their impact on adjustment has focused on beliefs about personal control, avoidance / denial and active information seeking.

The influential role of control beliefs in breast cancer patients has been supported by several studies. In a study of 78 women, aged 29 to 78, whose time after breast cancer surgery ranged from 1 to 60 months, adjustment was positively associated with high levels of perceived control over disease outcome and of physician control (Taylor et al., 1984). Hilton (1989) investigated the relationship between commitment, uncertainty about their cancer situation, threat of recurrence and control of the cancer situation to the coping strategies used by 227 non-hospitalised patients, aged 31-89, with a diagnosis of breast cancer. Use of escape – avoidance and accepting responsibility were characteristics of those women with low commitment, low perceived control and high perceived uncertainty and threat of recurrence. Seeking emotional support, as well as the use of planful problem solving, escape-avoidance, positive reappraisal and self – controlling strategies were adopted by women with high threat of recurrence and high control. Additionally, women with a greater sense of control over the cancer situation were more likely to feel that problem – solving, social support, self – controlling and information seeking strategies would help their adjustment.

Stanton et al. (2000) tested the hypothesis that coping through emotional processing, which involves actively processing and expressing emotions, enhances adjustment and health status for breast cancer patients. Participants (n = 92) were assessed both within 20 weeks and 3 months post-treatment. Use of coping through emotional

expression following primary treatment for breast cancer significantly predicted both psychological and physical adjustment. In particular, emotional expression as a coping strategy was found associated with decreased distress, increased vigour, improved self – perceived health status and fewer medical appointments for morbidities related to cancer and its treatment. Effects were present even after controlling for age and initial status in the above variables.

Meyerowitz et al. (1983) examined 113 women who had been operated for breast cancer 3.5 years prior to assessment. From those, 53 had undergone mastectomies alone, whereas 60 had shown some spread of the disease to the lymph nodes only and received long – term prophylactic chemotherapy as well. It was found that higher cancer-specific denial was associated with reduced post – mastectomy distress. Moreover, denial was more important in explaining distress than availability of social support, treatment group, time since operation or age. Avoidance and denial correlated with improved adjustment or reduced post-surgical distress in a number of other studies on breast cancer patients (Watson et al., 1984; Timko & Janoff-Bulman, 1985; Orr, 1986).

Lerman and colleagues (1990) evaluated the impact of coping styles, i.e. “monitoring” versus “blunting” or avoidance in information – seeking, on cancer patients. The results indicated that a monitoring coping style was associated with higher levels of anxiety and nausea before chemotherapy, and nausea during treatment. In contrast blunting, or use of distraction coping styles, was related to lower levels of anxiety and depression before treatment and less nausea during and after treatment. Coping strategies like information seeking, talking with others, humour, and distraction through other activities have also been found to provide relief from immediate distress but few long – term results (Scott & Eisendrath, 1985-1986).

### 3.4.4. Social Support

Dunkel-Schetter (1984) divided the needs of support in breast cancer patients into categories designated emotional support, instrumental support or practical help, information and appraisal. Three main sources of support have been identified by previous research: family support, especially from husband / partner, support from physicians and other medical personnel and support from other patients or support groups (Meyerowitz, 1980; Davison et al. 2000).

In a review of social support and its effects on health outcomes in post-mastectomy women, Lindsey and colleagues (1981) concluded that social support was a major factor mediating adjustment following breast cancer diagnosis and treatment. According to a number of studies, effects of social support for women with breast cancer include improved adjustment, higher levels of emotional well – being, and reduced fear of recurrence (Woods & Earp, 1978; Jamison et al., 1978; Bloom, 1982; Irvine et al., 1991). By reducing isolation and providing practical assistance and emotional aid, social support can act as a buffer to the stress of the disease and its treatment (Cohen & Syme, 1985; Israel & Schurman, 1990).

The doctor – patient relationship and preparation for physical discomfort and loss of a breast have also been found to improve adjustment (Maguire et al., 1978). The relationship with a supportive surgeon, radiologist or oncologist, who is sensitive to the concerns of the patient and who monitors emotional as well as physical well – being is very central to psychosocial adjustment (Rowland & Holland, 1989). The important role of nurses in maintaining continuity of care and in monitoring and managing psychological problems of breast cancer patients has also been emphasised by previous studies (Wieder et al., 1978; Faulkner & Maguire, 1984).



In general, prospective studies, using multiple indicators of social support, found beneficial effects of family and friends support on adjustment. Bloom (1982) suggested that family cohesiveness and amount of social contact had a direct positive effect on adjustment. Women were followed from a period of 1 week post-surgery through to 2½ years post-surgery.

In another study, Northouse (1988) assessed 50 mastectomy patients and their husbands at 3 days and 30 days post – surgery to determine the nature of the relationship between social support and adjustment. Mastectomy patients and their husbands were assessed on the Affects Balance Scale, the Brief Symptom Inventory and the Psychosocial Adjustment to Illness Scale. It was suggested that, although network size was not important, both patients' and husbands' perceived levels of support predicted better adjustment in the short (3 days) and the long-term (30 days).

In a study by Primomo et al. (1990), the Norbeck Social Support Questionnaire was administered to 125 chronically ill women (mean age 41.3) along with the Center for Epidemiological Studies Depression Scale, the Dyadic Adjustment Scale and measures of family illness demands and family functioning. It was found that family members provided the most affective support, while friends provided more affirmation. Affect, affirmation and reciprocity from partner and family were associated with less depression, higher marital satisfaction and better family functioning. Maguire et al., 1978 and Metze, 1978 have also reported similar results for mastectomy patients.

It is though important noting that there is an agreement in previous research that patient adaptation and psychosocial adjustment are higher, when their partners exhibited the following behaviours: participated in the decision about treatment, visited after the operation, saw the scar early, helped with dressings, resumed sexual

relations early, was in general actively involved in the rehabilitation process and did not assume a "protective-guardian" stance (Rowland & Holland, 1989). Finally, there is also evidence to suggest that a combination of peer and professional support can promote optimal psychological and physical recovery during initial hospitalisation (Euster, 1979; Scott & Eisendrath, 1985-1986).

### **3.4.5. Information, Doctor-Patient Communication and Decision – making**

Since the 1970s – 1980s, health professionals have begun to disclose more information about diagnosis, treatment and rehabilitation to breast cancer patients (Siminoff, 1989). The desire of breast cancer patients for open communication and their needs for information have been demonstrated in a number of studies (e.g. Cawley et al., 1990). It has been suggested that satisfactory information has a favourable effect on the recovery after breast cancer surgery and that the patient expects information from both doctors and nurses (Suominen et al., 1994). A number of studies have indicated that meeting information needs of patients with cancer in general, and involving these patients in management decisions, if they so wish, could promote quality of life and minimise the risk of psychiatric morbidity (Fallowfield et al., 1994; Richards et al., 1995) .

Benefits of the right person, giving the right information, at the right time, in the right place have been emphasised by previous research in relation cancer diagnosis and treatment. In a study of women with gynaecological cancer, clinically significant scores on anxiety or depression were associated with being more critical of various aspects of doctor- patient communication at diagnosis and during the first month of treatment. It was also found that more critical patients felt that they had not been given enough information, although a few felt they had been given unnecessary information (Paraskevaidis et al., 1993). Nevertheless, previous research has

suggested that quantity and quality of information provided to breast cancer patients may not be enough to promote optimal problem - solving (Love et al., 1985; Hopkins, 1986; Glanz & Lerman, 1992).

Effective communication in oncology is particularly important. Inadequate communication skills, especially in gynaecological oncology, can reduce patient compliance with treatment, may lead to inadequate or even wrong diagnosis, and minimise the likelihood of identifying psychosocial difficulties (Ley, 1990). Communicating effectively with the relatives of patients is not less important than communicating with the patients themselves. Harrison and colleagues (1995) interviewed the relatives of 108 recently diagnosed with cancer patients. Relatives had a significantly greater number of concerns than the patients and showed a very high level of psychological distress and morbidity. On the basis on the above, the importance of providing appropriate training in communication skills for medical student and medical staff working in oncology is evident (Wakeford et al., 1983; Maguire & Rutter, 1986; General Medical Council, 1993).

Finally, it has been claimed that being given a choice of treatment for breast cancer may reduce treatment-related psychological distress (e. g. Ascroft et al., 1985; Morris & Royle, 1988; Fallowfield et al., 1990) and facilitate adjustment (e.g. Valanis & Rumpler, 1985; Cassileth et al., 1980).

Nevertheless, according to Cawley et al. (1990), where 68 patients receiving breast – conserving surgery and radiation were surveyed, it is equally possible that large amounts of information and the need to make a decision about surgery may generate high levels of anxiety and confusion for some women.

### **3.4.6. Pre – diagnostic Psychiatric Morbidity and Health History**

It has been suggested that the effect of breast cancer surgery on psychological functioning is associated with level of functioning pre-operatively. Bloom and colleagues (1992) conducted secondary analysis on a longitudinal sample of 364 women, previously recruited for their 1975 study. The sample consisted of females who had undergone mastectomy (n=118), cholecystectomy (n=82), biopsy (n=80) or had no surgery (n=84). It was found that presence of psychiatric morbidity prior to diagnosis was predictive of subsequent poorer adjustment and emotional morbidity in breast cancer patients.

Hughes (1982) interviewed 44 patients with early breast cancer, aged 33-69. Patients were assessed about psychiatric symptomatology and emotional reactions to aspects of their illness and its treatment on three occasions during the year following diagnosis. Women with higher pre – operative scores on the General Health Questionnaire (GHQ) and who described themselves as more anxious, were more depressed at follow-up.

Ell et al., (1989) investigated social support, sense of control and coping behaviour in relation to adaptation to cancer (n=369, age range=35-68). Poor initial psychological status was a better predictor of psychological distress than were physical symptoms at two years post-diagnosis.

On the contrary, in a study by Maguire et al., (1978) semi-structured interviews were conducted with 75 breast cancer patients before mastectomy, at 4 and 12 months after mastectomy. Mood disturbance and sexual problems were found in 39% of the sample at follow-up, even after controlling for physical or prior psychiatric illness.

Several studies in this area assessed pre-existing psychiatric status after diagnosis or before treatment and not prior to breast cancer diagnosis. Thus, findings from such

research may reflect a more negative prognosis for women who exhibit extreme levels of distress upon diagnosis (Glanz & Lerman, 1992). Pennman et al. (1986) attempted to rectify this weakness of previous research. They conducted a combined cross – sectional and longitudinal controlled study on 1,715 women from 61 hospitals in 11 USA states. Participants had undergone radical, modified radical or simple mastectomy for Stage I or II breast cancer, breast biopsy for benign breast disease, cholecystectomy or no operative procedure. All groups were measured across a 12 – month period. Post-mastectomy women with other present life stressors (e.g. divorce, widowhood) and other pre-existing chronic diseases (e.g. arthritis, asthma, diabetes, sinus problems and varicose veins) were more vulnerable to poor outcome.

There are also cultural considerations regarding information provision, communication and decision – making in oncology (Walker, 1996). It has been suggested that in some countries, e.g. Greece, it is more common for doctors to announce a cancer diagnosis to relatives first rather than to the patient. Although a greater number of doctors (89%) disclose a cancer diagnosis at present than it used to be in the past (27%), doctors still tend to withhold the truth from cancer patients in Greece (Mystakidou et al., 1996) and in Italy (Mosconi et al., 1991; Pronzato et al., 1994; Gordon & Paci, 1997). In a Greek study (n = 116), Lavrentiadis and colleagues (1988) showed that as few as 15% of the patients were notified that they had cancer, whereas only 15% of the patients were satisfied with the information provided to them regarding their illness. Interestingly, however, although 50% wanted to know more about their illness, 34% did not. However, socio-demographic characteristics of these patients were not examined. A more recent study of 100 Greek patients with cancer receiving chemotherapy produced similar findings (Iconomou et al., 2002). Patients exhibited a great desire for information, especially regarding side effects of

chemotherapy, prognosis, how the treatment works and diagnosis. Patients were more satisfied with their care than with the information they received about their medical condition. Only 37% had been told they had cancer. In this study, disclosure of diagnosis was more likely for the younger and better - educated patients and those diagnosed with breast cancer. A number of Greek studies on truth - telling attitudes and practices of health professionals confirm the above results (Manos & Christakis, 1980-1981; Georgaki et al., 2002).

Findings of these studies imply a form of social pressure on health professionals to comply with a “do not tell” culture, despite themselves and the patients wanting otherwise (Mystakidou & colleagues (1996).

### **3.5. A Critique on Studies examining Factors of Adjustment to Breast Cancer**

#### **Surgery / Mastectomy**

Summarising some of the research on adjustment to breast cancer and breast cancer surgery / mastectomy (See Table 3.1.), it is worth mentioning the following points:

1. Only a few studies have focused on predicting adjustment to breast cancer and its treatment (e.g. Bloom, 1982; McCaul et al., 1999).
2. A proportion of studies used comparative controlled designs, i.e. comparing different treatments for breast cancer or other diseases with breast cancer (e.g. Ray, 1977; Zemore & Shepel, 1989; Omne - Ponten et al., 1994). The main focus of such studies, however, was not on adjustment. It was on the psychosocial impact of different types of breast cancer surgery or the effects of breast cancer mastectomy, as opposed to benign breast disease and non-cancer-related surgery.

Most of the studies comparing and contrasting breast cancer with benign breast or other non breast-related conditions presented with a number of weaknesses:

(a) Comparison groups are not necessarily meaningful and theoretically sound (e.g. there is no strong evidence why a comparison between benign breast disease and breast cancer or between breast cancer and other disease sufferers needs to be made).

(b) Prognostic factors, modality and type of treatment are rarely taken into account for breast cancer patients. These factors might affect mood and well-being variables. (c)

Lack of baseline psychological assessment before the experience of any breast

symptoms. (d) Use of limited prospective or cross – sectional designs, which might

mask changes developing over time or long – term effects of a breast cancer diagnosis

(Geyer, 1992). (e) Use of small samples may also interfere with the significance of differences detected or not detected.

3. Previous adjustment – related research has rarely measured adjustment by using

adjustment – specific scales. For example, Zemore and Shepel (1989) and Omne –

Ponten et al. (1994) measured psychosocial adjustment with the Social Adjustment

Scale, whereas in Baider and Kaplan De-Nour (1986) adjustment was measured by

the Psychosocial Adjustment to Illness Scale. In most cases, adjustment was measured

indirectly, through measurement of a number of related variables.

4. Where adjustment – specific measures were used, those measures, although

clinical to a large extent, were not breast cancer / mastectomy – specific. In Stanton et

al. (2000), for example, psychological adjustment to breast cancer was measured

using the Functional Assessment of Cancer Therapy and the Profile of Mood States.

However, even in this case, a general cancer – related measure was used accompanied

by a clinical measure. Andersen and Jochimsen (1987) emphasised in their critique on

research design and strategy in studies of psychological adjustment to cancer that

choice of appropriate measures constitutes a difficult methodological issue for cancer

– related research.

5. Previous research on adjustment to breast cancer has covered only certain aspects / domains of adjustment (e.g. psychosocial) with the physical aspects being most often neglected. Focus of previous research was mainly on psychological / emotional (e.g. Bloom, 1982; McCaul et al., 1999) or psychosocial adjustment only (e.g. Baider & Kaplan – De Nour, 1986; Omne – Ponten et al., 1994). Although, there has been evidence emphasising the importance of physical / medical indicators in adjustment to breast cancer (Henderson et al., 1989; Kreitler et al., 1997). Only a few studies have examined both physical and psychosocial aspects (e.g. Winick & Robbins, 1977). Nevertheless, there has been evidence pointing out that adjustment is a multi-variable, covering several aspects of a patient's life and function (e.g. psychological / emotional, social, physical) (Scott and Eisendrath, 1985-1986; Glanz & Lerman, 1992).

6. Research on psychological aspects of cancer and breast cancer has focused more on maladjustment than adjustment (Bloom, 1982). Previous research has very much focused on the psychopathological aspects of a breast cancer diagnosis and on its psychopathological consequences. Future research should focus on positive aspects of adjustment (e.g. effective coping, resuming normal activities as prior to breast cancer diagnosis).



**Table 3.1. Factors of Adjustment to Breast Cancer Surgery / Mastectomy**

Reference	Purpose	Sample	Independent variables	Dependent variable	Findings
Ray (1977)	Comparing psychological adjustment in mastectomy and other surgical patients (18 months to 5 years after surgery)	30 mastectomy and 30 cholecystectomy patients, age range=39-65	Type of surgery (mastectomy vs cholecystectomy)	Depression and Anxiety Self - Esteem Social Warmth, Social Abrasiveness, Social Attractiveness, Introversion (Adjective Check List) Body Cathexis	Mastectomy patients were significantly more depressed and anxious than cholecystectomy patients. They tended to have lower self-esteem and they described themselves as being more introverted in their behaviour. Differences were attributed to concern about both the loss of the breast and the possibility of recurrence of breast cancer.
Bloom (1982)	Examining predictors of adjustment to BC (within 2 and a half years post-surgery)	133 women with non-metastatic BC, mean age=51	Demographics Perceived support (emotional support, social contact, leisure activity) Accommodation to stress	Self - Concept (Janis -Field Scale) Sense of Power Psychological Distress (anxiety, depression, anger, vigour, fatigue, confusion)	Two indicators of social support, perception of family cohesiveness and of amount of social contact have direct effects on coping and indirect effects on all three measures of adjustment. Being employed and of higher social status affect adjustment to breast cancer significantly.
Baider & Kaplan Nour (1986)	Examining factors associated with adjustment in mastectomy (mean post-operation age=24months)	32 married women undergone mastectomy (mean age=49.4)	Family Perception (Family Environment Scale)	Psychosocial Adjustment (Psychosocial Adjustment to Illness Scale) Psychological Distress (Anxiety, Depression)	Family perception was significantly associated with all measures of adjustment.
Zemore & Shepel (1989)	Examining the effect of BC and mastectomy on social and emotional adjustment (within 2 years post-operatively)	301 women undergone mastectomy 100 women diagnosed with benign breast lumps	The experience of breast cancer and mastectomy Perceived Emotional Support	Social Adjustment (Social Adjustment Scale) Emotional Adjustment (Self-esteem, hopelessness, sensitivity-irritability, hostility, life satisfaction)	Perceived emotional support was positively correlated with adjustment. Breast cancer patients perceived greater emotional support from friends and family than benign controls. Breast cancer patients were no more socially or emotionally maladjusted than women with benign breast disease.
Omne-Ponten et al. (1994)	Evaluating the impact of type of breast cancer surgery on Psychological adjustment (at 4 and 13 months after primary operation)	66 women, aged 43-81, with stage I and II BC: 26 treated with breast conserving treatment (BCT) 40 with mastectomy (MT)	Type of breast surgery (BCT vs MT)	Psychosocial Adjustment (Social Adjustment Scale) Complaints about cosmetic aspects of surgery, body image, appearance	No differences between the two groups in psychosocial adjustment. In general, maladjustment was lower at 13 months after surgery, but 10% still showed maladjustment. 60% unwilling to show themselves naked, 22% felt less attractive, 68% complained about information on diagnosis.
McCaul et al. (1999)	Examining predictors of adjustment to BC (at diagnosis and 3-months later)	61 women with stage I (n=30) and II (n=31) BC, mean age=51.8	Demographics Medical variables (cancer stage, treatment) Coping	Distress (Profile of Mood States) Quality of Life (Medical Outcomes Scale)	The most consistent predictor of distress and quality of life was avoidant coping. Women who reported more avoidant coping were less distressed.
Stanton et al. (2000)	Examining variables associated with psychological and physical adjustment to BC (at 20 weeks and 3 months after surgery )	92 women with stage I and II BC, mean age=51.5	Coping style (COPE) Hope (the Hope Scale)	Psychological Adjustment (Functional Assessment of Cancer Therapy and the Profile of Mood States) Physical Adjustment (Health Status)	Use of expressing coping at entry was associated with fewer medical appointments, enhanced physical health and vigour and decreased distress 3 months later. Expressive coping was also associated with improved quality of life for those who perceived their social contexts as highly receptive. Coping through emotional processing was associated with greater distress over time.

### **3.6. Contribution and Innovative Aspects of the Present Research**

The contribution of the present thesis to existing knowledge regarding breast self – examination practice and screening mammography attendance has been previously presented (see chapter 1, paragraph 1.11. and chapter 2, paragraph 2.11. respectively).

Considering previous research and its limitations discussed in paragraph 3.6., the contribution of this part of the thesis, regarding core methodological and theoretical aspects, could be summarised to the following:

1. The present research examines exclusively factors of adjustment after breast cancer surgery. This is different from previous research, which rarely focused on breast cancer patients alone, and not in comparison with benign breast disease patients, and rarely sought to identify factors of adjustment. This choice is based on previous research, which have suggested that adjustment lies in the core of the breast cancer patient's coping with the disease, recovery and quality of life after surgery (Aaronson & Beckman, 1987; Kreitler et al., 1997). These have been shown to be important psychological aspects of breast cancer with several clinical implications (Rowland & Holland, 1998).

2. As suggested by a number of research reviews and critiques (Ingram, 1989; Scott & Eisendrath, 1985-1986; Andersen & Jochimsen, 1987; Bloom et al., 1992; Royak-Schaler, 1992), inconsistencies of previous research on factors associated with adjustment could be partly attributed to a uni-dimensional measurement of adjustment and lack of breast cancer – specific measures. Very few studies assessed adjustment as multi-variable (e.g. Ganz et al., 1987), whereas non-specific measures were widely used (see Table 3.1.). As opposed to previous studies, in the present research adjustment will be examined as a multi-dimensional variable, using a scale specific for the measurement of adjustment to breast cancer surgery. Hence, in the present

research, adjustment is defined as the degree to which the breast cancer patient managed to regulate her physical complaints, her sexual function, appearance issues, social and emotional function. Not only psychological / emotional but also physical and social components are measured as components of adjustment. Additionally, in order to obtain both a more wide and accurate assessment of adjustment, in the present research measurement will provide both the overall and domain – specific scores of adjustment (i.e. physical, sexual, appearance satisfaction, social and emotional) (see chapter 7, paragraph 7.3.3.).

Other methodological contributions of the this part, concerning selection and measurement of factors of adjustment are presented below:

1. In this part of the present research, the applicability of health belief constructs will be examined in relation to adjustment to a medical condition after diagnosis, as opposed to disease prevention / early detection and promotion of health behaviours in previous literature. Utilisation of the HBM for the explanation of adjustment to a diagnosed illness, will add a new dimension to the applications of the model. To achieve the above goal, in the present research prevalent mastectomy-related attitudes, beliefs and worries, identified by previous research, are organised into certain health belief constructs. Their association with adjustment will also be studied.

2. Continuous medical advances in breast cancer care have increased availability and choice of treatment options. Consequently, there has been an increase in the needs for provision of information and also participation in treatment decision – making. For this, the present research will examine the role of coping with illness-related information styles with adjustment to breast cancer surgery.

3. No previous studies on styles of coping with illness – related information as predictors of adjustment to breast cancer surgery have been found. The decision to

examine the above association in this part of the present research was made, firstly, on the basis of previous evidence that the informational needs of breast cancer patients are not always met at such a level as to facilitate their coping with the condition and their recovery process (Love et al., 1985; GIVIO, 1986; Hopkins, 1986; Glanz & Lerman, 1992). Secondly, there is evidence that patients differ in the way they cope with health-related information and that may have serious clinical implications, regarding patient-doctor communication, patient's distress levels and recovery. Relevant literature has identified different styles of coping with illness – related information, i.e. “monitors” and “blunters” (Miller et al., 1988). These styles have been examined in a variety of cancer –related areas, e.g. in patients with pre-cancerous cervical disease (Miller et al., 1994), patients with cancer (Lerman et al., 1993) and adherence with BSE (Miller et al., 1996), but never in relation to adjustment to breast cancer surgery / mastectomy. The present study will examine coping with illness – related information in association with mastectomy adjustment, using the Miller Behavioral Style Scale (MBSS) (Monitoring versus Blunting) (Miller, 1987).

4. Research on social support and breast cancer poses some problems, which the present thesis will attempt to rectify: (a) Only a few studies have focused on the patients' own perception of the quality and quantity of the psycho - social support they receive (Bloom, 1982). Social support was usually measured by standardised scales (Northouse, 1988; Primomo et al., 1990). This part of the present research will examine perceived social support, defined as the patient's self-report and rating of how helpful -both practically and emotionally- their social network were in relation to her coping with breast cancer and its treatment.

(b) As Bloom (1982) emphasised in a review of previous literature in the introduction to her study, it is important to view social support as a multi-dimensional variable. Therefore, the present part will assess both perceived emotional and practical support from various social sources.

Other contributions of this part of the present research, regarding general theoretical and research stance to the examination of adjustment to breast cancer include the following:

1. There is a lack of cross-cultural studies on adjustment to breast cancer surgery / mastectomy. Cultural factors have rarely been examined with a few exceptions, where non-European samples were used (e.g. Baider & Kaplan De-Nour, 1986). The present research will add a cultural dimension to the study of adjustment to mastectomy and provide cross-cultural comparisons of adjustment between Scottish and Greek women. Rationale for this cross-cultural comparison is presented in chapter 4., paragraph 4.3.

2. The term “adjustment” has been chosen over other relevant terms, to be used in the present study, because it appears neutral and does not impose any particular positive or negative directions in the patients’ attempts to deal with the changes associated with breast cancer and surgery. Previously used terms include “quality of life” (as in Ganz et al., 1992), “well-being” (as in Gottschalk & Hoigaard-Martin, 1986), “recovery” (as in Bloom et al., 1992) and “rehabilitation” (as in Ganz et al., 1987). Also, language in previously used questionnaires for breast cancer patients has not always been very considerate of women’s feelings about breast cancer. Unlike previously used questionnaires, language and terminology used in the questionnaires of the present part of thesis have been selected with caution. Terms like “breast cancer” and “mastectomy” have been completely excluded from the questionnaire

and the terms “breast problem / condition” and “breast surgery / operation” have been used instead (see Appendix XI).

3. Previous research has adopted a generally negative perspective, focusing on maladjustment rather than positive adjustment to life after breast cancer (Bloom, 1982). However, there has been evidence of the resilience some women show in coping with the disease and transforming their experience to a number of positive changes in their life (Fallowfield & Clark, 1991). The present part of the research adopts a more positive perspective, by focusing not only on aspects of maladjustment but also on aspects of positive adjustment and effective coping.

## **Part B – Methodology**

## **Chapter 4: Methodology**

### **4.1. Introduction**

The results chapters of the thesis are organised into three main parts. Each of the parts is dedicated to a large thematic area of the breast cancer – related spectrum: (a) adherence to BSE, (b) (screening) mammography attendance and (c) adjustment to breast cancer surgery/mastectomy. Literature review for each of the results chapters has been presented in chapters 1 to 3.

### **4.2. Structure of the Thesis**

Each result chapter consists of a set of research studies. Their main aims are summarised briefly below:

#### **1. Studies on BSE Practice (chapter 5) are aiming:**

- To compare BSE practices and attitudes between younger (aged  $\leq 30$ ) and older women (aged  $>30$ ) in Scotland.
- To compare factors of BSE practice between younger women in Scotland and Greece.

#### **2. Studies on Screening Mammography Attendance (chapter 6) are aiming:**

- To compare breast screening attenders and non-attenders in relation to their attitudes and knowledge about screening mammography.
- To compare attitudes towards mammography between women, undergoing mammography, in Scotland and in Greece.

#### **3. Studies on Breast Cancer Surgery / Mastectomy (chapter 7) are aiming:**

- To compare levels of adjustment between patients, who have undergone breast cancer surgery / mastectomy in Scotland and in Greece.
- To identify factors of adjustment to breast cancer surgery / mastectomy in Scotland



and in Greece.

### **4.3. General Theoretical Framework and Selection of Variables**

The theoretical framework, that each results chapter has been based on, is presented separately in each result chapter. Their commonalities are presented below:

1. Studies of the thesis are based on the Health Belief Model (HBM), as defined by Becker and colleagues (1977b). The present thesis could be considered as a HBM – inspired study, because health belief constructs have been examined in relation to all three main issues examined in the thesis, i.e. BSE practice, (screening) mammography attendance and adjustment to breast cancer surgery. Nevertheless, testing the applicability of the Health Belief Model was not the exclusive aim of the present thesis. The HBM was used as a general framework for the formulation of new theoretical models, which were tested in each of the result chapters. The HBM constructs included in the present thesis are described briefly below:

- Perceived susceptibility measures beliefs concerning the subjective vulnerability of the participants to breast cancer, in comparison with other diseases.
- Perceived severity measures attitudes of the participants regarding the consequences of breast cancer to their well – being (e.g. affecting the ability to work, belief that breast cancer is not easily cured).
- Perceived benefits measures beliefs regarding the effectiveness of BSE and mammography as a method for early detection of breast problems.
- Perceived barriers measures both psychological/emotional (e.g. embarrassment) and practical/logistic costs (e.g. time concerns) of practising BSE and attending for breast screening.

- Cues for action measures perceived social influence as a range of triggers for practising BSE and attending for mammography (e.g. reading a relative article in a magazine/newspaper, watching a relevant TV programme, a family member/relative/friend having done breast checks).

- Health motivation measures readiness to be concerned with various health matters, in terms of complying with health recommendations in general (e.g. having a cervical smear, regular dental check-ups).

2. A multi - factorial view is adopted in the results chapters of the thesis. Adherence with breast care behaviours is thought to be affected by a number of factors. Therefore, a number of factors, examined sporadically by previous research, are incorporated in a single model. Variables included in the present thesis slightly differ across the three main thematic areas, following to the specific theoretical models and the research questions across the parts. However, the general classes of variables included in all parts are demographics / health history, knowledge, health beliefs and health-related personality (i.e. locus of control, affectivity, coping styles and decision making styles and coping with information styles). There has been evidence linking the above factors with each of the three outcome variables examined in the present thesis (see chapters 1, 2 and 3). The personality variables included in the present research are defined as follows:

- Health Locus of Control (HLOC). It has its origins in Rotter's (1966) social learning theory. HLOC has been defined as the generalised expectancy relating to the perceived relationship between one's actions and expected outcomes. Rotter made the distinction between two types of locus of control beliefs. Internals believe that events are a consequence of their own actions. Externals believe that events are unrelated to their actions and thereby determined by factors beyond their control. Wallston et al.

(1978) extended Rotter's work to health. He introduced three types of HLOC beliefs, which are examined in the present thesis. These were Internality (the belief that health is influenced by the individual's own actions), Powerful Others (the belief that health depends on health professionals' actions) and Chance (the belief that health is a matter of chance).

- **Affectivity.** Positive affect (PA) reflects the extent to which a person feels enthusiastic, active and alert. High PA is a state of high energy, full concentration and pleasurable engagement, whereas low PA is characterised by sadness and lethargy. In contrast, negative affect (NA) is a general dimension of subjective distress and unpleasurable engagement. NA subsumes a variety of aversive mood states, such as anger, contempt, disgust, guilt, fear and low nervousness, with low NA being a state of calmness and serenity (Watson et al., 1988). However, according to Tellengen (1985), PA and NA are related to dominant personality traits, such as extraversion and anxiety/neuroticism respectively.

- **Health – Related Coping.** The term “coping” describes the range of responses for dealing with everyday hassles and stressors as well as with the demands and threats of illnesses and related treatment. It refers both to the thought processes and the actions, which are employed. Classifications of coping often involve two broad categories, reflecting either approach “positive” / “functional” coping or avoidance (“negative” or “dysfunctional” coping). Irrespectively to classification, coping can be used to describe either specific strategies or general styles used, regardless of their efficacy, to eliminate, reduce or change the demands of a stressful experience (problem-focused) and to manage the associated negative emotions (emotion-focused) (Weinman & Johnston, 1995). The health – related coping styles examined in the present thesis are derived from the COPE scale (Carver et al., 1989) and are described as follows.

Active coping entails taking actions and exerting efforts to remove or circumvent a health stressor. Seeking emotional support is getting sympathy or emotional support from someone, when faced with a health problem. Acceptance is defined as contemplating the fact that the stressful health – related event has occurred and is real. Focusing and venting on emotions entails an increase awareness of one's emotional health – related distress and a concomitant tendency to discharge those feelings. Denial is an attempt to reject the reality of a stressful health event. Finally, use of alcohol / drugs, entails consumption of substances to distance oneself from the stressful health problem and numb unpleasant feelings.

- **Health – Related Decision Making.** According to the Conflict Model for decision Making (Janis & Mann, 1977), which incorporates both cognitive and affective components of the decision making process, stress induced by decisional conflict is a major determinant of the quality of decision making. The decision making styles suggested by the Conflict Model are used to cope with the stress caused by the decisional conflict. The adopted coping style depends on absence or presence of conflict, of alternatives (e.g. hope for a solution) and of time (i.e. adequate time or time pressure). The health – related decision making styles included in the present thesis are based on the Melbourne Decision Making Questionnaire (Mann et al., 1997) and include the following: Vigilance, which is characterised by evaluating the situation, searching painstakingly for relevant information and making sound and careful health – related decisions. Hypervigilance, which includes opting for solutions that promise immediate relief, being impulsive and overlooking consequences or choices due to emotional excitement. Buck – passing / defensive avoidance, which entails constructing wishful rationalisations, making incomplete and biased evaluation of health – related information and an increased risk for making unsuitable decisions.

Procrastination, which is defined as escaping conflict by delaying and shifting responsibility to others (e.g. family and doctors).

- **Coping with Health – Related Information.** Recent research has identified patient characteristics that need to be considered in communicating information to those who face high cancer risks or who have cancer. Stable individual differences have been found in patients' reaction to potentially stressful information about cancer and other threatening medical conditions, as well as in the effects of these differences on patients' psychological well – being (Miller, 1995). According to Miller et al., (1988), there are two opposite styles of coping with health – related information, both included in the present thesis. “Monitors” tend to desire more voluminous and detailed information about their health and, when such information is provided, they become less anxious. On the contrary, “blunters” neither want nor seek such information and, if it is provided, their anxiety levels tend to increase.

It may be worth noting that traditional variables of personality and mood (i.e. personality dimensions, such as Neuroticism, and traits, e.g. hostility) have not been included in the present thesis. Instead health – related personality variables have been examined in relation to adherence with specific health behaviours. Several reasons supported this decision. Firstly, although previous research has provided evidence supporting the personality – health link, the nature of this relationship is yet to be clarified (Wasylikiw & Fekken, 2002). Current research on the personality – health link could be classified into three possible models of association. The first model assumes that personality traits represent underlying biological differences that contribute to different health outcomes. The second model assumes a correlational only relationship, with biological differences resulting in both traits and health outcomes. The third model assumes that differences in health outcomes are in part due

to differences in behaviours and personality contributes to these behaviours (Matthews and Deary, 1998). It has been suggested that for more productive research strategies, studies should focus on mechanisms linking behaviour to health, rather than merely correlating traits with health outcomes (Krantz & Hedges, 1987). Given the uncertainty regarding the direction of the link, the present thesis adopts the third stance, which is also compatible with its scope. Thus, the scope of the present research is to investigate factors of adherence with specific breast care behaviours, aiming to breast cancer early detection.

Secondly, previous research on the association between traditional personality variables and health behaviours has been very limited and produced mixed findings (see chapters 1-3). Moreover, it has been suggested that there are more links between personality and BSE practice than with mammography attendance and that the psychological picture differs for each screening behaviour (Siegler & Costa, 1994). Hence, in the present research affectivity was considered only in BSE and not in screening mammography. Also, on the basis of the above evidence, the health-specific personality variables, included in the present research, varied across the health behaviours examined.

Thirdly, it has been suggested that specific personality variables, e.g. coping, are closely related to traditional personality factors, which are more general, inclusive concepts (Suls & Harvey, 1996). Coping with health issues is included in the present thesis. Additionally, it has been suggested that predictors should match the health outcome in specificity. More specific attitudes are better predictors of specific health behaviours than general attitudes (Fishbein & Ajzen, 1974). Similarly, more specific personality variables are expected to be associated with specific health behaviours (Wasyliw & Fekken, 2002), such as those the present research focuses on.

3. Results chapters of the thesis introduce a cultural perspective in investigating BSE, mammography and adjustment to breast cancer surgery / mastectomy, by offering comparisons between Scotland and Greece. As suggested by previous research, ethnicity and socio-cultural factors can account for differences in knowledge, beliefs and practices regarding adherence to breast care recommendations (Glanz et al., 1996; Peragallo et al., 1998; Borrayo & Guarnaccia, 2000). There are, however, certain reasons for choosing the above countries to compare. Incidence and mortality rates of breast cancer are different between UK and Greece. The UK has one of the highest, while Greece has one of the lowest breast cancer mortality rates in women of all ages in the European Community. Nevertheless, since 1970, the Greek incidence and mortality rates have risen by 57% and 45% respectively for women under 65 years (WHO, 1995a). Furthermore, uptake of BSE differs between the two countries. Greece has one of the lowest rates of BSE practice in the EC (21.4%), in comparison with 25.8% of British women in all ages (15 to 64 plus). Greece has also the lowest percentage (15.9%) of BSE uptake in the younger age group (aged 15-34) in the EC, as opposed to a higher percentage of British women (20.8%) of the same age group (The state of women's health in the European Community, 1997). Although there is lack of research on BSE using Greek samples, the few existing studies have reported low levels of monthly practice of BSE and low levels of knowledge about the behaviour and breast cancer (Kavga-Paltoglou, 1990; Patistea et al., 1992). Moreover, a positive association between lack of knowledge and low practice in Greece has been suggested (Patistea et al., 1992).

Considering the increase in breast cancer incidence and mortality, accompanied by evidence on low BSE adherence and knowledge levels in Greece, even amongst health professionals, it would be especially beneficial to promote BSE there. In the

UK there have been several campaigns, concerning the risks of breast cancer and the benefits of preventive behaviours, such as BSE, in the UK (Europe against Cancer, 1988 and 1989, as cited in Pitts et al., 1991). Nevertheless, as yet there has been no equivalent campaign in other EC countries (Pitts et al., 1991) and specifically in Greece. The utility of such a campaign might be determined, in part, by examining the differences between Greek and equivalent UK samples, who have been exposed to formal and informal messages about BSE, but who are otherwise comparable in terms of age, level of education and health history. As well as enabling us to examine baseline levels of knowledge and attitudes towards BSE and breast care in general in Greece, the present research indirectly allowed us to discuss, in broad terms, the efficacy of British health campaigns. The extent in which the two groups differ in their views and practices may be a reflection of the power of the messages concerning these topics, which are found in the formal health setting, but also extensively in women's magazines and other informal media sources in the UK.

Finally, the UK is the only European Community country with a National Breast Screening Programme. Sweden, Finland, the Netherlands and Luxembourg offer breast screening to women as part of their national insurance (state medical insurance). Denmark, France and Spain have mammography screening programmes in some areas only (The state of women's health in the European Community, 1997).

In Greece, mammography is applied generally for prevention or diagnosis, but testing does not take the form of a structured mass - screening programme. There have been only a few cases of short-term mammographic screening at a local level, implemented for the purposes of research studies. These targeted specific population groups, at high risk of breast cancer due to occupational exposure to certain carcinogens, in relation to the general population, e.g. agricultural workers exposed to pesticides (e.g.



Dolapsakis et al., 2001). Nevertheless, there is no evidence to date that the efficacy and cost – effectiveness of these initiatives and mammography in general have been a matter for investigation for the purposes of policy formulation in Greece (Mousiama et al., 2001).

In addition, the two countries of comparison have also different systems of health care in general. British women can access specialists only after GP referral (gate-keeping system), while Greek women have access to specialists of their choice without referral from a family doctor being necessary. In Greece specialists may have private practices and are not necessarily based in hospitals, as in the UK. Other differences between the two countries include use of health services and perceived health status. Greek women appear to consult the doctor more often and perceive themselves as being healthier more than British women (The state of women's health in the European Community, 1997).

The previously mentioned differences between the two countries are expected to affect attitudes, beliefs and practices of BSE and mammography and also adjustment and coping with breast cancer and its treatment. Nevertheless, there have been only a few cross-cultural studies, comparing British with non - EC samples regarding breast care behaviours (e.g. Pitts et al, 1991). Moreover, there have been no studies comparing two EC countries and especially an EC country with organized health campaigns for BSE and a National Breast Screening Programme, like the UK is, and an EC country, where BSE has not been one of the priorities for health authorities and there is no mass-screening programme, like Greece. In addition, cross-cultural comparisons of this kind are particularly important for the following reasons. One of the major health priorities of the EC is the well - being of its populations. In this context early detection and successful treatment of diseases like breast cancer, which

is one of the most common types of cancer in the EC, become important aims (Euro-Statistics, 1995a).

#### **4.4. Sample, Method and Measures**

As a number of different samples have been drawn and different measures have been used to meet the demands of the thesis and its aims, these are presented in each of the results chapters separately. The same also applies to the methodology and procedure employed in each of the key research areas.

The present research was questionnaire – based (self or health professional - rated). Data sources differed across the three parts of the thesis, according to scope and methodological objectives and practicalities. Self – report was used to obtain information on BSE practice of younger and older women, as well as on past history of screening mammography attenders. Self - report data have been widely used in previous research as regards BSE practice and mammography attendance (see chapters 1 and 2 for relevant literature). Nevertheless, reliability and validity of such data have often been questioned. Some of the main weaknesses identified include the affective state of the respondent at the time of coding and retrieval, lack of uniformity of approach, social desirability and memory bias (Stone et al., 2000). There have been specific reasons why self – report have been used in the present research. Firstly, self – report is a generally non-expensive and readily available method (Caplan et al., 2003). These qualities make it more suitable over other methods for collection of large amount of data within a limited time frame, as in the present research. In addition, despite its weaknesses, self – report has been shown to be a quite accurate and valid method of obtaining information about family cancer history of patients and self – management of chronic health conditions, which positively correlated with

medical records and medical findings (Theis et al., 1994; Heisler et al., 2003). Secondly, self – report is the only or the most reasonable method of collecting data on health behaviours, over which individuals have a high control or on behaviours of an intimate / personal nature (Stone et al., 2003), like BSE. Thirdly, although it is more widely used on BSE, previous research has also found it able to provide reasonably accurate and relatively consistent data on mammography attendance, compared with other more objective sources, such as administrative data (Fulton-Kehoe et al., 1992; Rauscher et al., 2002).

Self- report was also used to collect socio-demographic and health history information (e.g. personal and family history of breast disease), with the exception of screening mammography non-attenders and breast cancer surgery patients. In these two cases the above information was recorded directly from patient records by health professionals. A different method was chosen in these cases for the following reasons. Firstly, distress associated with a diagnosis and treatment of breast cancer could interfere with accuracy and specificity of information reported by breast cancer patients, as documented by previous literature (Kihlstrom et al., 2000). Furthermore, by not requesting health – related information directly from the patients, we avoided to further impose on already physically frail and emotionally distressed, due to poor health, patients (Scott & Eisendrath, 1985-1986; Malec et al., 1988; Pater et al., 1997). Secondly, screening non-attenders are shown by previous research as being generally non-responsive towards health research and as coping ineffectively with health –related materials, in terms of information comprehension and recall (Rimer et al., 1988).

Eligible non-attenders were also identified from medical files, whereas university staff from electronic university employee records. Use of medical files has been

suggested to be an inexpensive source of information in health research. It utilises readily available data and integrates multiple data sources, but it may rely on incomplete and inaccurate data, divorced from clinical context (Thomas et al., 2003). Reliability and validity of both keeping and retrieving information from medical records has often been questioned (Horwitz & Yu, 1984). It has been suggested that documentation of important clinical information is poor even in hospital medical records of patients (Nasseri et al., 1994). Furthermore, it has been claimed that inadequate medical records might reduce the quality of care and undermine retrieval of information for research purposes (Cox et al., 2003). Nevertheless, there has been evidence that, especially in the area of breast cancer, important patient information (e.g. occupation, stage, tumour size and status and family history of cancer) is documented in medical records, although improvements are still necessary (Watzlaf et al., 1996). In order to increase accuracy and specificity of retrieved data for research purposes, previous studies have suggested that information should be extracted by trained personnel (Reisch et al., 2003). Considering the evidence, in the present thesis information was obtained from medical records by medical and nursing staff. These were directly clinically involved with the participants and familiar with record keeping in each clinical setting, in order to increase both accuracy and clinical relevance of retrieved information. In addition, to increase specificity and continuity of approach, information was recorded to a data record sheet. To increase face value and usability, participating health professionals were consulted in devising the record sheets.

It is worth noting that measures were translated into Greek (see Appendices III, IX, XIV and XV). Backwards translation (from English to Greek and from Greek back to English) was not used. However, the instruments were independently translated by

two researchers and then compared by them for consensus. Translated versions of the measures were also approved by participating academic, medical and nursing staff in Greece, in terms of acceptability and accuracy.

#### **4.5. Ethical Considerations**

In all cases participation was entirely voluntary and anonymous. No problems were reported in relation to the comprehension and administration of questionnaires. The present research was approved by the Ethics Committee of the University of Stirling – Department of Psychology, the Ethics Committee of the Forth Valley Health Board, the Clinical Director of the West of Scotland Breast Screening Programme and the director. The cross-cultural parts of the present research were also approved by the medical team of the Mammographic Unit in the “Galinos” Centre in Ioannina, Greece, the medical and nursing team of the Department of Breast Pathology and Surgery, Gynaecological Clinic, University Hospital of Ioannina.

#### **4.6. Data Analysis Plan**

Analysis of data was carried out in SPSS for Windows, version 8. Missing data were automatically excluded from the analysis. Frequencies of both categorical and continuous variables were obtained to control for normality and presence of outliers.

Different research questions and different sample characteristics as well as and distribution of data in the research variables required different types of statistical analysis in each of the three main thematic areas of the thesis (i.e. BSE, screening mammography and breast cancer surgery / mastectomy).

However, the general pattern of analysis used in all the three result chapters of the present thesis was the exclusion method. This is a method of excluding variables by

using elimination procedures. It consists of two levels of statistical analysis, employing uni-variate followed by multivariate tests. Firstly the association between the dependent and the independent variables was examined by using uni-variate tests, i.e.  $\chi^2$  analysis and one-way ANOVA. Differences between categorical variables were tested by means of  $\chi^2$  analysis and between continuous variables by means of one-way ANOVA. When required, post hoc comparisons were examined by means of Scheffe tests (Howell, 1992). One-way ANOVA was used for comparisons between two groups in continuous variables, instead of an equally suitable independent sample t – test (Howell, 1992). In the result chapter on BSE practice, use of one-way ANOVA was unavoidable in the cases when the categorical variable consisted of more than two groups (see Table 5.8 in paragraph 5.4.1.3. and Table 5.11. in paragraph 5.5.1.4.) Hence, to achieve compatibility, one-way ANOVA was used as a uni-variate test across the three results chapters for comparisons between a dyadic categorical variable and continuous variables.

It is worth noting that in the present thesis, despite the use of multiple testing, Bonferroni corrections were not used. Multiple testing presents a problem, because, upon repetition, many phenomena, however unlikely, are expected to occur, based on chance alone (Pajak et al., 2000). This practically means that, when many statistical tests are carried out, there will inevitably be false positives, increasing the chance of type I error (Thomas et al., 1985). Type I error refers to accepting false-positive associations, whereas Type II error a false-negative ones (Pajak et al., 2000). The Bonferroni correction is alleged to provide maximum protection against excessive type I error (Ludbrook, 1991). It is based on the Bonferroni inequality, which states that the probability of the occurrence of one or more events can never exceed the sum of their individual probabilities (Howell, 1992). Thus, the Bonferroni adjusts the p

values resulting from multiple hypotheses testing. To achieve this raw p values are multiplied by the number of the associations tested (Pajak et al., 2000; Ludbrook, 2001). Despite its usefulness, the Bonferroni correction suffers a number of limitations. Firstly, it is in most circumstances overprotective, especially if the number of comparisons exceeds about 5 (Ludbrook, 1991), which is the case in the analysis of the present thesis. Secondly, another main limitation of the Bonferroni is that by decreasing the probability of making a Type I error, increases the chance of committing a type II error (Ottenbacher, 1988). This is especially the case, when more than a small number of comparisons (5-8) are included in a given research study (Silverstein, 1986). Under such circumstances, the Bonferroni procedure results in a dramatic loss of power and a corresponding increase in the probability of a type II error. Thirdly, the Bonferroni test assumes that all multiple hypotheses are independent of each other, which is rarely a pragmatic assumption. If hypotheses are correlated, as in the present thesis, the Bonferroni procedure may be too harsh (Ludbrook, 2001). Due to the above limitations, the Bonferroni criterion may become so conservative that the probability of detecting any true associations is virtually nil (Thomas et al., 1985). Nevertheless, type II errors are also important in studies like those included in the present thesis, where research questions often involve dyadic health outcomes (e.g. practising or not BSE, attending or not screening mammography). Consequently, instead of using the Bonferroni, in the present thesis actual p values are always reported to allow evaluation by reviewers (Thomas et al., 1985; Ludbrook, 2001). In addition, when deemed necessary for the scope of particular research questions (i.e. lack of previous evidence and need for further exploration), all associations are reported, significant or not (see chapter 5, paragraph 5.4.1.1.) (Thomas et al., 1985). In the present thesis, in cases of multiple comparisons,

the cut – off points for statistical significance used were .01 and .001, as recommended by previous literature (Pajak et al., 2000).

When further exploration of certain research questions was needed, associations between continuous variables were assessed via Pearson's  $r$  product moment correlations. To perform within - group comparisons between certain continuous variables, one sample  $t$  - test was used. These independent variables, which in univariate analysis produced statistically significant differences in the dependent (outcome) variable, entered the second level of analysis.

The second level of analysis aimed to identify predictors of the dependent (outcome) variables. The multivariate tests used were Unconditional Logistic Regression and Linear Regression Analysis. Linear Regression Analysis was used for continuous dependent variables and Unconditional Logistic Regression Analysis in the case of categorical dyadic dependent variables. To obtain the computerised calculation of the latter, dyadic outcome variables were entered in the "dependent" box and the independent variable(s) in the "covariates" box. The option "enter" was chosen in the "method" box. Outcome (e.g. practised BSE or attended for screening mammography) was dichotomised as "adhered with the behaviour in question" = 1 versus "did not adhere with the behaviour in question" = 2. In order to perform Logistic Regression, in all cases variables were checked for abnormalities in terms of multicollinearity and skewness. Relationships between continuous independent variables were investigated by examining Pearson's  $r$  correlations. Whilst there were intercorrelations between them, no bivariate correlation exceeded .70, thus none of the variables was excluded from the Logistic Regression analysis. All continuous variables that entered the Logistic Regression analysis presented with skewness within accepted limits ( $skew < 1$ ) (Tabachnick & Fidell, 1989).



In both types of Regression Analysis, predicting variables were tested both independently (as single predictors), as classes of predictors (e.g. knowledge predictors, health belief predictors, personality predictors) and as an overall group of predictors. This approach enabled to test the predictive utility of factors both individually and as a group. All significant factors, as identified by uni-variate tests were tested against the dependent variable through individual regressions, in order to identify whether they were significant predictors. Those that were found to be significant predictors were entered in an overall regression analysis, in order to determine by use of  $\text{Exp}(B)$ , which of the predictors in a certain group had the greatest influence on the dependent variable. The most powerful single predictor was the one with the lowest  $\text{Exp}(B)$  coefficient. The reason for using the  $\text{Exp}(B)$  statistic as a criterion for selecting the most powerful predictor in the Logistic Regression Analysis is that  $\text{Exp}(B)$  is defined by Tabachnick and Fidell (2000) as “the odds of being in one outcome category when the predictor changes for one unit of measurement” and is recommended as a method for the selection of the predictor with the single highest influence on the dependent variable in a Logistic Regression Model. In other words, the  $\text{Exp}(B)$  can be used for comparisons among predictors regarding their effect on the dependent variable, when tested as a group.

The exclusion method of analysis has been extensively been used in other areas of health psychology and health – related research, e.g. in research on quality of life / well - being (e.g. Jang et al., 1998; Mentes et al., 1999) and bullying and aggressive behaviour (e.g. Karatzias et al., 2002). Nevertheless, it has rarely been applied to breast care behaviours (e.g. Aiken et al., 1994 to compliance with mammography-screening recommendations).

The above method was chosen as the most suitable method of analysis both for methodological and theoretical reasons. Firstly, previous research on adherence to breast care behaviours and on coping with breast cancer has examined various classes of factors with inconclusive though findings. However, these classes of factors have never been examined in a single study before but were rather sporadically and selectively investigated across studies (see chapters 1, 2 and 3 for reviews of previous research). In the present thesis variables were organised in one single model for each health outcome and their predictive ability was examined. Secondly, starting with a large number of factors, this method enabled the exclusion of factors that were not significantly associated with the dependent (outcome) variables. Cutting down on the number of factors entering the regression analysis, allowed for systematic testing of the research questions and the production of meaningful results (i.e. fewer but more relevant factors were considered).

The exclusion method was also in agreement with the theoretical formulations adopted by the present thesis, i.e. the Multi-factorial Model for BSE practice, the Multi-factorial Model for screening mammography attendance and the Overall Adjustment to Breast Cancer Surgery / Mastectomy Model (see chapters 5, 6 and 7). An important assumption of the above models is a multi-factorial investigation of the health outcomes in question, which is served best by this method.

## **Part C – Results**

## **Chapter 5: Studies on Practice of Breast Self – Examination (BSE)**

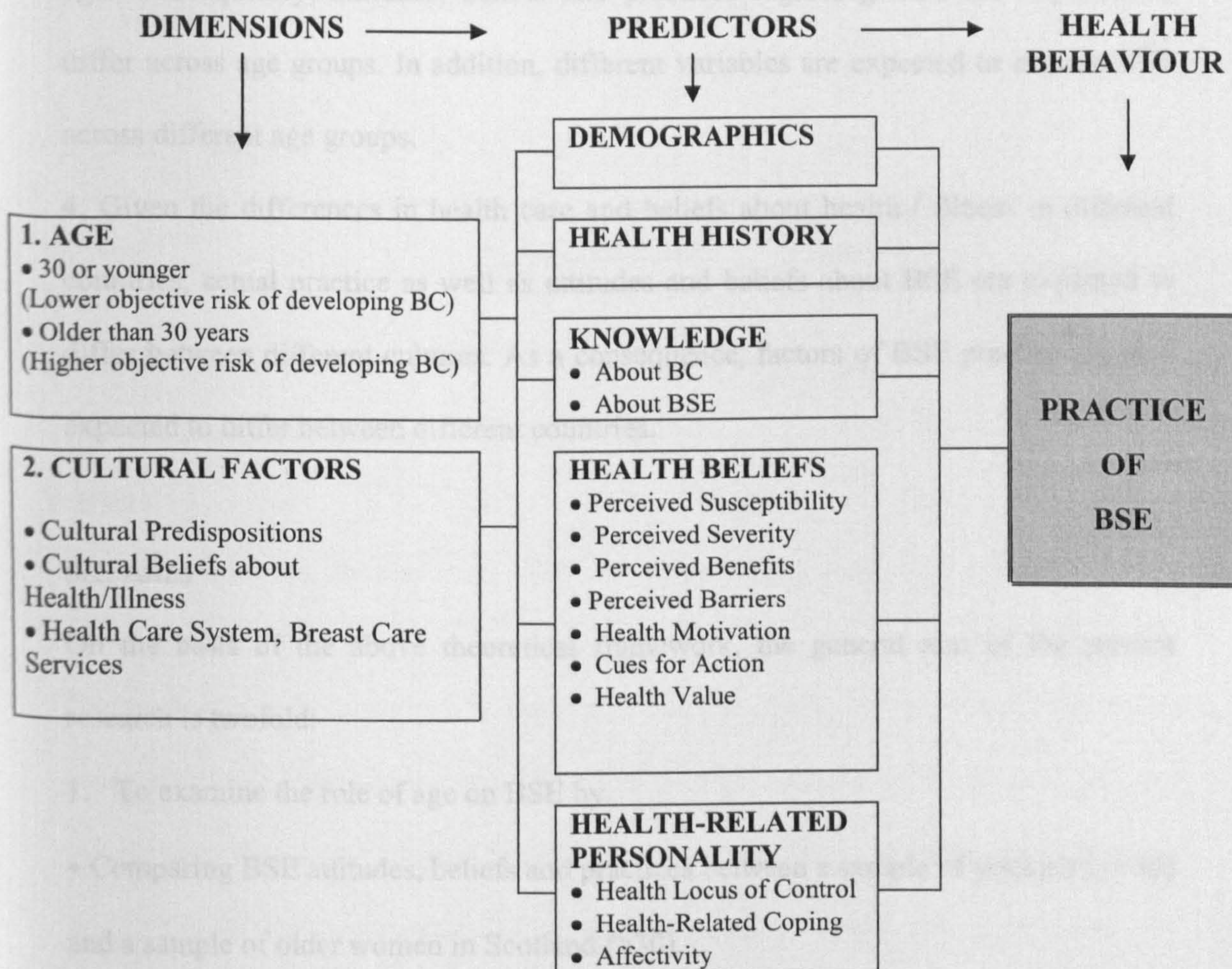
### **Abstract**

**Aims.** The present study aimed to examine the association between (a) BSE and age and (b) BSE and cultural factors. Therefore, BSE beliefs and practices between younger (aged  $\leq 30$ ) and older women (aged  $>30$ ) in Scotland were compared. Factors associated with BSE practice within each group were identified. Finally, BSE beliefs and practices between women in Scotland, a country with organised health campaigns about BSE, and women in Greece a country without such campaigns were examined. **Participants.** Sample consisted of 205 younger and 258 older women, university staff and students in Scotland and 85 younger women, university students in Greece. **Measures.** All participants completed a questionnaire assessing knowledge about breast cancer and BSE, a Health Belief Questionnaire, the Health Value Scale, the Positive-Negative Affectivity Scale (PANAS), the Multidimensional Health Locus of Control Scale (MHLOC) (form A) and the COPE scale. **Findings and Conclusions.** BSE practice in younger women was predicted by knowledge about breast cancer, perceived barriers, health motivation and cues for action. BSE practice in older women was predicted by knowledge about BSE, perceived barriers and cues for action. Different variables were found to predict BSE practice across age and cultural groups. Also, BSE practice was predicted by different factors across different time intervals of practice, confirming the theoretical assumption of the present study that BSE is a complex behaviour and should not be measured by a single time frame variable. BSE rates in both countries were higher than previously reported but did not differ between the two cultural groups. However, although practice was not different, the two groups differed significantly in their knowledge, attitudes towards BSE and personality.

## 5.1. Introduction

Previous research findings on advantages and disadvantages of BSE and also on factors associated with BSE practice were presented in chapter 1. The present chapter is based on two main research studies, which were conducted in Scotland and Greece. These studies explore research questions on attitudes towards and adherence to breast self – examination (BSE) recommendations. Figure 5.1 below highlights factors considered by the present set of research studies as possible contributors to BSE practice. Their association with BSE practice is presented in chapter 1 of the thesis.

**Figure 5.1. The Multi-Factorial Model For BSE Adherence**



[Key: BC = Breast Cancer, BSE = Breast Self – Examination]

The above model (see Figure 5.1.) incorporates a number of assumptions. These were formulated on the basis of previous evidence, presented in chapter 1. The assumptions are presented as follows:

1. BSE is defined as a multi-dimensional variable, influenced by a number of different factors. For this reason, it should be assessed by using a multi-factorial theoretical formulation, which takes into account the effect of a number of different groups of variables.
2. The present research examines BSE through two dimensions, i.e. age and culture.
3. Objective risk for developing breast cancer has been reported to differ according to age. Consequently, attitudes, beliefs and practices regarding BSE are expected to differ across age groups. In addition, different variables are expected to explain BSE across different age groups.
4. Given the differences in health care and beliefs about health / illness in different countries, actual practice as well as attitudes and beliefs about BSE are expected to differ between different cultures. As a consequence, factors of BSE practice are also expected to differ between different countries.

## **5.2. Aims**

On the basis of the above theoretical framework, the general aim of the present research is twofold:

1. To examine the role of age on BSE by
  - Comparing BSE attitudes, beliefs and practices between a sample of younger ( $\leq 30$ ) and a sample of older women in Scotland ( $>30$ ).
  - Exploring factors of BSE practice in each age group.
2. To examine the role of cultural factors on BSE by

- Comparing BSE attitudes, beliefs and practice between female university students in Scotland and in Greece.
- Identifying factors of BSE practice in each cultural group.

### 5.3. Method

#### 5.3.1. Participants and Procedure

Data were collected from: (a) a sample of younger ( $n = 205$ ) women (aged  $\leq 30$ ) and a sample of older women ( $n = 258$ ) in Scotland (aged  $>30$ ), both consisting of university staff and students and (b) a sample of younger women in Greece ( $n = 85$ ), consisting exclusively of university students (see Table 5.1.).

**Table 5.1. Sample**

Samples	Data collected (n)	Entered in analysis (n)	Age Categories	
			Younger ( $\leq 30$ ) (n)	Older ( $> 30$ ) (n)
University staff in Scotland	353	322	78	244
University students in Scotland	184	141	127	14
<b>TOTAL</b>	537	463	205	258
University students in Greece	85	34*	85	0

\*after stratification

Description of sample is given in Table 5.2. The age of 30 years was used as a cut-off point to define older and younger. There were several reasons for this choice. The age – dependent risk for developing breast cancer has been well – documented (Mesko et al., 1990). Breast cancer statistics have shown that 80% of cases occur in post – menopausal women. Breast cancer is indeed extremely rare in women in early twenties and uncommon in women under 35. However, it is after 35 when the risk

begins to increase (i.e. from 1 in 15,000 up to age 25, the risk rises to 1 in 1,900 up to age 30 and 1 in 200 up to age 40), rising sharply after the menopause (<http://www.cancerscreening.nhs.uk/> Breast Cancer, 2003). The age of 30-40 years has also been accepted by previous research on BSE practice (e.g. Stillman, 1977) as the point when breast cancer risk increases substantially. Therefore, in the present research this age point is considered as critical, since an increase in objective risk may or may not coincide with a subsequent increase in the perceived risk, followed by changes in BSE practices and attitudes. The age of 30 has also been previously used as the cut-off point for the definition of “younger women” by BSE studies on university student samples (e.g. Steptoe et al., 1994 and Wardle et al., 1995). Furthermore, the age of 30 seemed a convenient cut-off age point, according to the distribution of ages within the staff and student groups used in the present research. Because of the dispersion statistics in age of both groups (i.e. range and SD), using 30 as a cut – off value would create two sub-samples of almost equal size.

The total population (N = 971) of female employees in the University of Stirling, Scotland consisted of 37.5% domestic workers (n = 364), 34.9% secretarial/technical (n = 339) and 27.6% academic/academic-related (n = 268). A seven-part questionnaire along with an information letter (see Appendix I), explaining briefly the aims of the project and the return procedure, was send via internal mail to all employees. A total of 353 employees responded (response rate 36.3%). From those, 12 participants were excluded from analysis, because they were non-British, 17 due to missing data on ethnicity, whereas another 2 participants because of missing data on age. The remaining sample of 322 employees consisted of 78 younger (24.2%) and 244 (75.8%) older women.



Data were also collected from 184 female students of the same university. From those, 42 were excluded, because they were non-British and 1 due to missing data on ethnicity. The remaining sample of 141 students in Scotland consisted of 127 aged 30 or younger and 14 aged over 30. Students in this university are required to participate in research projects within their department as part of their studies. Recruitment took place through advertisement (Subject Panel). The questionnaire administered was the same as the one administered to staff. Students were approached through the Subject Panel and were offered credit for the completion of the questionnaire. The questionnaires were given out during classes and students were asked to place the completed questionnaire in a sealed envelope in an agreed location. The group “younger women” in Scotland ( $n = 205$ ) was created by collating 78 employees and 127 students, aged 30 or younger. Respectively, the group “older women” in Scotland ( $n = 258$ ) resulted from collating 244 employees and 14 students, aged 30 or more.

Data were also collected from 85 female students of the University of Ioannina, Greece, all aged 30 or younger. Out of 85, 34 entered the analysis after age stratification (see paragraph 5.5.2.). The questionnaires were given out by an academic member of staff, member of the research team in Greece, and students were asked to return the completed questionnaire to this member of the research team. The questionnaire used was the same as in staff and students in Scotland. In all cases, participation was entirely voluntary and the questionnaire anonymous and confidential.

**Table 5.2. Demographic Background and Health History**

<b>DEMOGRAPHIC BACKGROUND</b>	<b>CATEGORIES</b>	<b>Younger in Scotland n = 205 (%)</b>	<b>Older in Scotland n = 258 (%)</b>	<b>Younger in Greece n = 85 (%)</b>
<b>Education</b>	Basic Education		65 (25.2%)	
	University Degree		68 (26.3%)	
	Postgraduate Degree		64 (24.8%)	
	College/Professional		30 (11.6%)	
	No Answer		31 (12.1%)	
<b>Marital Status</b>	Married/Cohabiting	50 (24.4%)	187 (72.5%)	1 (1.2%)
	Divorced/Separated	2 (1.0%)	31 (12.0%)	0 (0.0%)
	Widowed	0 (0.0%)	0 (0.0%)	0 (0.0%)
	Never Married/Single	153 (74.6%)	29 (11.2%)	83 (97.6%)
	No Answer		11 (4.3%)	1 (1.2%)
<b>Parity</b>	None	179 (87.3%)	72 (27.9%)	81 (95.3%)
	One-Two	23 (11.2%)	140 (54.3%)	0 (0.0%)
	Three of more	2 (1.0%)	44 (17.0%)	0 (0.0%)
	No Answer	1 (0.5%)	2 (0.8%)	4 (4.7%)
<b>Type of job</b>	Domestic		30 (11.6%)	
	Academic/Academic-Related		115 (44.6%)	
	Secretarial/Technical		99 (38.4%)	
	Non Applicable		14 (5.4%)	
<b>HEALTH HISTORY</b>				
<b>Personal History of Breast Disease</b>	Malignant	1 (0.5%)	5 (1.9%)	1 (1.2%)
	Benign	13 (6.3%)	60 (23.3%)	6 (7.1%)
	No history	189 (92.2%)	193 (74.8%)	78 (91.8%)
	No Answer	2 (1.0%)		
<b>Family History of BC</b>	Yes	59 (28.8%)	67 (26.0%)	18 (21.1%)
	No	115 (56.0%)	139 (53.9%)	59 (69.4%)
	Do not know	3 (1.5%)	16 (6.2%)	2 (2.3%)
	No Answer	28 (13.7%)	36 (13.9%)	6 (7.2%)

This decision to collect data from university staff and students was made in order to assist comparability with previous research findings. Thus, in previous research, university student and staff samples were often used for the examination of BSE beliefs and practices. For example, Hailey and Bradford (1991) examined BSE and mammography beliefs in a sample of 201 university staff and faculty. A number of studies have also focused on university undergraduate student samples (Pitts et al., 1991; Wardle et al., 1995). In addition, previous research has claimed that women in academic environments are likely to be in the vanguard of any major changes in health practices, because of their greater exposure to information and resources (Pitts et al., 1991).

The research questions examined by study are described on Table 5.3. below.

**Table 5.3. Research Studies on BSE Practice**

<b>Research Studies on BSE Practice</b>	<b>Samples (n) (entered in analysis)</b>	<b>Research Questions</b>
<b>Younger VS Older women in Scotland</b>	n = 463 total 205 younger 258 older	<b>Age and BSE</b> • Identifying factors of BSE practice within age groups • Comparing BSE practices and attitudes between age groups
<b>Younger women in Scotland VS Greece</b>	n = 68 total 34 in Scotland 34 in Greece (after stratification)	<b>Culture and BSE</b> Comparing BSE practices and attitudes between cultural groups

### 5.3.2. Materials

A six – part questionnaire (see Appendix II) was used for data collection considering feasibility, time constraints and previous research (see chapters 1 and 2). While sample items from previous studies stimulated the researcher's thinking as regards the issues that needed to be studied, questionnaire parts and items were originally developed for the present research. Contents of each questionnaire part are described below:

**Part One:** Questions about personal details (i.e. age, marital status, parity and ethnic group) and health history (i.e. personal history of breast problems and family history of breast cancer) were included. The questions assessing history of breast cancer and cancer in the family replicated Strauss's et al. (1987) questionnaire.

**Part Two:** It included questions assessing knowledge about breast cancer and BSE. Knowledge about BSE was assessed using three multiple – choice questions. The first question assessed possible causes / factors that may increase one's vulnerability to breast cancer (e.g. A woman is more likely to develop breast cancer if she: "is single", "has had a hysterectomy" etc.). A set of 9 possible answers was provided, only 4 of

them correct. A higher score indicates a greater number of risk factors identified (range 0-4). The second question looked at the age when breast cancer risks substantially increase (i.e. On average the chances of a woman developing breast cancer become substantially greater after she passes which birthday? “20<sup>th</sup>”, “30<sup>th</sup>”, “40<sup>th</sup>”, “50<sup>th</sup>”, “60<sup>th</sup>”, “have no idea”). Correct answer was either “30<sup>th</sup>” or “40<sup>th</sup>” (scored 1, range 0-1). The third question assessed knowledge about prognosis of breast lumps (i.e. Most lumps discovered in the breast turn out to be cancer: “Yes”, “No”, “Have no idea”). Correct answer was “no” (scored 1, range 0-1). All the above questions were derived from the Stillman Questionnaire (Stillman, 1977), which was extensively used by previous studies (e.g. Schlueter, 1980; Beckett et al., 1990). The sum of scores from the three questions formed a “total knowledge about breast cancer” score (range 0-6).

Knowledge about recommended timing of BSE was assessed by use of a single question: “The best time to carry out breast checks is: Just before a period, Just after a period”, In the middle of the monthly cycle”. Correct answer was “Just after a period” (scored 1, range 0-1). Knowledge about recommended frequency of BSE was assessed with the question: “Generally, how often should women check their breasts for possible lumps? Once a month, Every other month, Every three months, Once a year, Do not know”. Correct answer was “Once a month” (scored 1, range 0-1). The above questions were derived from Price (1994). The information required to answer all the above knowledge questions, were included in the guidelines and leaflets produced by the Hellenic Anti – cancer Institute (2000).

A small number of reversibly scored items were included in some of the above questions (i.e. knowledge about risk factors and breast lumps). This is a method frequently encountered in previous health-related research, where both actual and

ideal answers are included. It has been documented as an effective means of reducing social desirability effects. This is achieved by randomising answers and, thus, preventing items from being easily “read” by participants (Sheeran & Abraham, 1996).

**Part Three:** Self-reported practice of BSE was assessed with three consecutive questions: “Have you ever carried out breast checks?” (Yes - No), “During the past three months how many times approximately did you carry out breast checks?” (None, Once, Twice, Three or more) (Practice in the short-term), “During the past year how often did check your breasts?” (Not at all, Once or twice, Once every other month, Once every month) (Practice in the long-term). The first question assessing BSE practice has been also used in previous relevant studies (e.g. Stillman, 1977; Alagna & Reddy, 1984; Beckett et al., 1990; Coe et al., 1999; Wellisch et al., 1995). The second and third questions were derived from Ronis and Harel (1989). It may be important to note that answer options in the above questions are not exhaustive of all possible frequencies of BSE within the given time intervals. This is especially the case for the third question. Nevertheless, these options were utilised for reasons of consistency and comparability with previous research. Moreover, the present research was more interested in picking up variations in BSE practice dynamically, developed across time frames, rather than statically considering all possible variations within a time interval. Thus, unlike some previous studies (e.g. Wellisch et al., 1991), three outcome variables / time intervals were included, instead of a single-framed one.

Knowledge about the procedure of BSE was assessed by providing a list of 12 recommended steps, as illustrated in leaflets/booklets produced by the health authorities and leading charities both in the UK and Greece. Participants were asked to indicate which of those steps/procedures followed, when examining their breasts

(e.g. “examine breasts during bath or shower”, “look at breasts in mirror with arms at sides”). All statements were correct. A higher score indicated a greater number of correct steps ticked (each answer ticked scored 1, range 0-12). The question about BSE procedure was derived from Friedman et al. (1994) and Calnan and Rutter (1986) and has been amended in language and format to meet the needs of the present study. Similar questions, assessing proficiency/technique of BSE by use of a checklist of recommended steps/procedures, have also been used in previous research (e.g. Calnan & Moss, 1984; Kenney et al., 1989).

The sum of scores from this question and the questions concerning recommended frequency and timing (see part two of the questionnaire above) formed a total knowledge about BSE score (range 0-14).

**Part Four:** This part looked at health beliefs (susceptibility, severity, benefits, barriers, health motivation, cues for action) in relation to BSE, using a Health Belief Questionnaire. The Questionnaire was constructed for the needs of the present thesis based on items from previously used scales (e.g. Stillman, 1977; Champion, 1984; Calnan & Rutter, 1986; Champion, 1992). It consisted of 54 items, divided in 9 sub-scales. Cronbach’s alpha for the global score was 0.70 and in the 0.69 to 0.75 range across sub-scales. Each sub-scale consisted of 6 items in a 4 – point agree-disagree Likert - type scale (e.g. “I am more susceptible to breast cancer, compared to other diseases”). In the present chapter only the 6 sub-scales were used (36 items in total), because these were applicable to BSE practice.

The health value scale by Lau et al. (1986) was also included in this part. It consists of four items, in a 6 – point Likert –type agree-disagree scale, for example, “If you don’t have your health, you don’t have anything”. According to Lau et al. (1986), the alpha reliability or internal consistency of the scale is fairly constant across populations,

varying between 0.63 and 0.73. These reliability coefficients are considered acceptable for a scale comprised of only four items. Test – retest reliability of the scale was estimated at  $r = 0.62$  over an 18 – month time interval.

**Part Five:** This part consisted of the Positive - Negative Affectivity Scale (PANAS) by Watson, Clark and Tellegen (1988a), which includes 20 adjectives, 10 measuring positive (e.g. “determined”, “proud”) and 10 measuring negative affect (e.g. “distressed”, “irritable”). Internal consistency of the scale, reported for different time frames (ranging from present moment to generally), for both sub-scales, exceeded 0.84. Test-retest reliability was 0.68 for the positive affectivity sub-scale and 0.71 for the negative affectivity, when treated as trait measures (Watson et al., 1988a). As shown in Watson et al. (1988), the two sub-scales are independent from each other ( $r = -0.09$ ). Negative affectivity was also found positively and significantly associated with self-reported stress and health complaints, whereas positive affectivity was positively and significantly associated with social activity and the up-take of physical exercise (Watson et al., 1988a).

**Part Six:** It included the Multidimensional Health Locus of Control Scale (MHLOC) (form A) by Wallston et al. (1978) and a shortened version (sub - scales 1, 4, 9, 10, 11 and 14) of the Cope scale by Carver et al. (1989).

The MHLOC Scale provides measures of three dimensions of health locus of control described briefly below: Internality (the extent to which an individual believes the locus of control for health is internal), Chance, (the belief in chance or external factors in determining health outcomes) and Powerful Others (the belief that one’s health depends on powerful others, particularly health professionals). Each dimension consisted of 6 statements in a 6 – point Likert - type answer scale. Reliability

coefficients (Cronbach's alpha) for the global scale, as reported by previous studies, ranged from 0.67 to 0.77 (Wallston & Wallston, 1981).

The Cope scale is a multidimensional coping inventory, assessing situational (responses to a specific situation or during specific period of time) or dispositional coping (typical responses to stressors) or both. Psychometric properties are well - documented in previous research. Reliability coefficients exceeded 0.60 across sub-scales (Carver et al., 1989). Out of a total of 13 sub-scales 6 were used in the present study. Of these, 3 sub-scales are measuring positive (i.e. active coping, seeking emotional support and acceptance) and 3 negative coping styles (i.e. focusing on emotions, denial and substance use). The sub-scales selected were: active coping, (e.g. "I take direct action to get around a problem"), seeking emotional support (e.g. "I talk to someone about how I feel"), acceptance (e.g. "I learn to live with it"), focusing on and venting on emotions (e.g. "I get upset and let emotions out"), denial (e.g. "I say to myself this isn't real") and use of alcohol / drugs (e.g. "I try to loose myself for a while by drinking alcohol or taking drugs"). Each sub-scale consisted of 4 statements in a 6 - point Likert - type answer scale (e.g. "I try to get emotional support from friends or relatives"). To control for any effects of this shortening on the internal consistency, intercorrelations were calculated. They were found low to high, ranging from 0.092 ( $p = 0.049$ ) to 0.566 ( $p = 0.0005$ ).

Instructions have been linguistically changed, in accordance to the focus of the present research. Participants were specifically asked to state the extent to which they used each coping style to deal with "regular and common health problems".



## 5.4. Results

### 5.4.1. Dimension One: Age and BSE

#### 5.4.1.1. Comparing Younger and Older Women in Scotland in Demographics, Health History, Knowledge, Health Beliefs and Personality

$\chi^2$  analysis was used to control for differences between the two groups in demographics and health history. Statistically significant differences were found in marital status, parity and personal history of breast disease (see Table 5.4).

**Table 5.4. Differences between Younger and Older Women in Scotland**

BY VARIABLE		Younger (n = 205)	Older (n = 258)	$\chi^2$	df	p
<b>DEMOGRAPHICS</b>						
<b>Marital Status</b>	Married/Cohabiting	50	187	186.9	2	0.0005
	Divorced/Separated	2	31			
	Never Married/Single	153	29			
<b>Parity</b>	None	179	72	163.5	3	0.0005
	One	15	38			
	Two	8	102			
	Three	1	33			
<b>HEALTH HISTORY</b>						
<b>Personal History of Breast Disease</b>	Yes	16	65	23.9	1	0.0005
	No	189	193			
<b>Personal History of BC</b>	Yes	1	6	2.6	1	0.107
	No	204	252			
<b>Family History of BC</b>	Yes	59	67	6.7	2	0.035
	No	115	139			
	Do not know	3	16			
	No Answer	28	36			

Differences between younger and older in knowledge, health beliefs and health-related personality were tested using one – way ANOVA. The significance level was set up to .01 and .001 (see Table 5.5). The two groups did not differ significantly in knowledge about breast cancer and about BSE. In terms of health beliefs, the two groups differed significantly in barriers, health motivation and health value. In term of

personality, differences were found in powerful others health locus of control, emotional support and denial (see Table 5.5).

**Table 5.5. Differences between Younger and Older Women in Knowledge, Health Beliefs and Health-Related Personality**

<b>BY VARIABLE</b>	<b>Younger (n = 205)</b>	<b>Older (n = 258)</b>			
<b>KNOWLEDGE VARIABLES</b>	<b>Mean (SD)</b>	<b>Mean (SD)</b>	<b>F</b>	<b>df</b>	<b>p</b>
Knowledge about BC	2.5 (0.9)	2.8 (0.9)	6.0	1	0.015
Knowledge about BSE	6.5 (2.7)	6.7 (2.7)	0.5	1	0.497
<b>HEALTH BELIEFS</b>					
Susceptibility	14.5 (3.0)	14.1 (3.1)	2.3	1	0.129
Severity	14.6 (2.8)	14.8 (3.0)	0.5	1	0.477
Health Motivation	18.6 (2.6)	20.9 (2.7)	89.5	1	0.0005
Cues for Action	18.7 (3.1)	18.0 (3.6)	4.3	1	0.038
Benefits of BSE	19.8 (2.6)	19.9 (3.3)	0.0	1	0.957
Barriers towards BSE	12.8 (2.7)	11.4 (3.0)	24.3	1	0.0005
Health Value	15.5 (3.8)	13.7 (3.3)	28.7	1	0.0005
<b>HEALTH – RELATED PERSONALITY</b>					
<b>COPING</b>					
Active Coping	11.3 (2.5)	11.9 (2.6)	5.8	1	0.017
Acceptance	11.0 (2.3)	10.9 (2.4)	0.5	1	0.493
Seeking Emotional Support	11.0 (3.3)	9.9 (3.3)	12.7	1	0.0005
Focusing/venting on Emotions	9.6 (3.1)	9.0 (3.0)	3.7	1	0.056
Denial	7.0 (2.3)	6.3 (2.1)	13.4	1	0.0005
Alcohol/drug Use	5.3 (2.6)	4.9 (1.8)	5.3	1	0.022
<b>HEALTH LOCUS OF CONTROL</b>					
Internal	23.5 (4.0)	24.0 (4.5)	1.5	1	0.217
Chance	16.7 (4.9)	15.8 (5.6)	3.2	1	0.073
Powerful Others	15.6 (4.9)	14.1 (4.8)	10.4	1	0.001
<b>AFFECTIVITY</b>					
Positive	32.7 (6.9)	33.5 (7.0)	1.6	1	0.206
Negative	22.2 (7.7)	20.7 (7.2)	4.7	1	0.031

[BC = Breast Cancer]

#### **5.4.1.2. Comparing BSE Practice between Younger and Older Women in Scotland**

Differences in BSE practice between the groups were investigated by  $\chi^2$  analysis.

Statistically significant differences were found in “having ever practised BSE”, with more practisers being older. In both groups, however, the number of practisers

outweighed that of non-practisers. No differences were found in “practice during past 3 months” and in “practice during the past year” (see Table 5.6).

**Table 5.6. Differences in BSE Practice between Younger and Older Women**

<b>Having ever practised</b>	<b>Younger n=205 (%)</b>	<b>Older n=258 (%)</b>	$\chi^2$	df	p
Have practised	125 (61.0%)	233 (90.3%)	56.0	1	0.0005
Have not practised	80 (39.0%)	25 (9.7%)			
<b>BSE Practice in past 3 months (Short -term)</b>					
No practice in short-term	22 (10.7%)	41 (16.1%)	5.9	2	0.052
Some practice <sup>1</sup>	87 (42.5%)	139 (53.9%)			
Recommended practice <sup>2</sup>	15 (7.3%)	52 (20.1%)			
Never practised before	80 (39.0%)	25 (9.7%)			
No Answer	1 (0.5%)	1 (0.2%)			
<b>BSE Practice in past year (Long – term)</b>					
No practice in long-term	3 (1.5%)	11 (4.3%)	5.2	2	0.075
Some practice <sup>3</sup>	100 (48.8%)	160 (62.0%)			
Recommended Practice <sup>4</sup>	21 (10.2%)	59 (22.9%)			
Never practised before	80 (39.0%)	25 (9.7%)			
No Answer	1 (0.5%)	3 (1.1%)			

[Key: 1 = “once/twice”, 2 = “once a month”, 3 = “once/twice or every other month”, 4 = “once a month”]

#### **5.4.1.3. Factors associated with BSE Practice in Younger Women in Scotland**

Differences in BSE practice by demographics / health history were examined by using  $\chi^2$  analysis. No significant differences in BSE were found at the .01 and .001 significance level (see Table 5.7).

**Table 5.7. BSE Practice and Demographics / Health History in Younger Women in Scotland**

<b>Having ever practised</b>			
	$\chi^2$	df	p
Parity	6.1	2	0.048
Personal History of Breast Disease	5.1	1	0.024
Family History of BC	0.7	1	0.387
<b>BSE Practice in past 3 months (Short -term)</b>			
Parity	3.2	2	0.201
Personal History of Breast Disease	2.1	2	0.343
Family History of BC	3.5	2	0.170
<b>BSE Practice in past year (Long – term)</b>			
Parity	1.1	2	0.587
Personal History of Breast Disease	1.5	2	0.466
Family History of BC	1.3	2	0.532

One – way ANOVA was used to control for differences in BSE practice by each of the following variables: knowledge, health beliefs and personality. Statistically significant differences were found between “having ever practised” and the following variables: knowledge about breast cancer, barriers, health motivation and cues for action. All these variables were positively associated with practice, except for barriers, which were negatively associated with practice. Also statistically significant differences were found between “practice in past 3 months” and knowledge about breast cancer. Knowledge was again positively associated with practice. According to post hoc Scheffe, participants who reported “some practice” in the past 3 months were more knowledgeable than those who did not practice at all. No significant associations were identified between “practice in past year” and any of the variables examined (see Table 5.8).

**Table 5.8. Factors of BSE Practice in Younger Women in Scotland\***

<b>BSE Practice</b>	<b>FACTORS</b>	<b>F</b>	<b>df</b>	<b>p</b>	<b>Scheffe</b>
<b>Having ever practised</b>	Knowledge BC	18.0	1	0.000	
	Barriers	26.5	1	0.000	
	Health Motivation	7.5	1	0.007	
	Cues for Action	10.0	1	0.002	
<b>Practice in short-term</b>	Knowledge BC	5.9	2	0.004	1-2**
<b>Practice in long-term</b>	No associations found				

\*  $p < .05$  level, \*\*  $p < .01$  level, \*\*\*  $p < .001$  level

**\*NOTE: Only highly significant results at .01 and .001 are presented**

**[Key for Scheffe: 1 = No Practice, 2 = Some Practice (less frequent than recommended)]**

Regression analysis was used to examine the predictive value of the factors, which were found associated with BSE in each of the three practice variables. Unconditional Logistic Regression Analysis was performed for the variable “having ever practised” and Linear Regression Analysis for “practise in past 3 months”. This decision was based on the fact that the former was binary, whilst the latter not.

Only factors found significant in the univariate analysis entered the regression analysis. This enabled minimising the numbers factors to enter the regression analysis. Their predictive value in relation to BSE practice was examined both as single factors and as groups.

Knowledge about breast cancer, barriers, health motivation and cues for action were found significant predictors of “having ever practised”. As a group these variables explained 32.4% of the practice variance. The most powerful single predictor in the group was knowledge about breast cancer ( $\text{Exp}(B) = 0.495$ ). The group showed high accuracy of prediction, as 73.0% of participants being correctly classified. The highest predictive accuracy was found for membership of the practisers’ group (83.9% were correctly predicted as “having practised”). Knowledge about breast cancer alone

explained 11.1% of the practice variance, barriers 15.8%, health motivation 4.9% and cues for action 6.4%. The factor, which independently explained the highest proportion of the practice variance, was barriers. Health beliefs, as a group, accounted for 24.8% of the practice variance. The most powerful independent predictor in the health belief group was cues for action ( $\text{Exp}(B) = 0.840$ ) (see Table 5.9).

Knowledge about breast cancer was not a significant predictor of “practice in past 3 months”. Regression analysis for “practice in past year” was not performed, because no significant associations between this variable and the factors under study were detected in the uni-variate analysis (see Table 5.9).

**Table 5.9. Predicting BSE Practice in Younger Women in Scotland**

BSE PRACTICE	PREDICTING VARIABLES	Model $\chi^2/F$	Model P / p	df	Nagelkerke / R <sup>2</sup>	Overall correctly classified <sup>1</sup> %	Practisers correctly classified <sup>2</sup> %	Non-Practisers correctly classified <sup>3</sup> %	B	S. E.	Exp (B)
Having ever practised	Knowledge BC	17.5	0.0000	1	0.111	64.7	94.4	17.7	-0.7	0.2	0.509
	Barriers	25.1	0.0000	1	0.158	68.3	86.18	40.5	0.3	0.1	1.341
	Health Motivation	7.4	0.0065	1	0.049	61.2	92.6	13.7	-0.1	0.0	0.854
	Cues for Action	9.8	0.0017	1	0.064	61.3	90.3	16.2	-0.1	0.0	0.861
	Barriers	40.0	0.0000	3	0.248	68.5	80.5	50.6	0.3	0.1	1.311
	Health Motivation								-0.2	0.1	0.845
	Cues for Action								-0.2	0.0	0.840
	Knowledge BC	53.7	0.0000	4	0.324	73.0	83.9	56.4	-0.7	0.2	0.495
	Barriers								0.3	0.1	1.301
	Health Motivation								-0.2	0.1	0.842
	Cues for Action								-0.2	0.1	0.843
Practice in short-term	Knowledge BC	5.8	0.017	1	0.046				0.1	0.0	

[Key: 1 = overall percentage of participants who were predicted correctly, 2 = percentage of participants who were correctly predicted in the category of practisers, 3 = percentage of participants who were correctly predicted in the category of non-practisers]

#### 5.5.1.4. Factors associated with BSE Practice in Older Women in Scotland

Univariate tests were used to identify factors of BSE practice in the group of older women. Differences in BSE practice by demographics / health history were examined by using  $\chi^2$  analysis. No significant differences were found at .01 and .001 significance levels (see Table 5.10).

**Table 5.10. Demographics/Health History and BSE Practice in Older Women in Scotland**

<b>Having ever practised</b>	$\chi^2$	df	p
Education	1.9	3	0.592
Kind of Job	0.1	2	0.932
Marital Status	7.0	2	0.029
Parity	12.1	4	0.016
Personal History of Breast Disease	2.5	1	0.110
Family History of BC	3.1	1	0.078
<b>BSE Practice in past 3 months (Short-term)</b>			
Education	8.3	6	0.215
Kind of Job	7.5	4	0.109
Marital Status	5.9	4	0.210
Parity	10.2	8	0.253
Personal History of Breast Disease	1.3	2	0.519
Family History of BC	0.7	2	0.697
<b>BSE Practice in past year (Long-term)</b>			
Education	5.5	6	0.484
Kind of Job	7.0	4	0.138
Marital Status	1.9	4	0.752
Parity	12.4	8	0.134
Personal History of Breast Disease	2.1	2	0.340
Family History of BC	1.3	2	0.529

Differences in BSE practice by each of the following variables: knowledge, health beliefs and personality were examined by using one – way ANOVA. Statistically significant differences were found between “having ever practised” and the following variables: barriers and cues for action. Barriers were negatively and cues for action positively associated with practice. Also statistically significant differences were found between “practice in past 3 months” and the following variables: knowledge



about BSE and barriers. Knowledge was positively and barriers negatively associated with practice. According to post hoc Scheffe, participants who reported “recommended practice” in the past 3 months were more knowledgeable than those who did not practice at all (see Table 5.11).

Statistically significant differences were found between “practice in past year” and knowledge about BSE and barriers. According to post hoc Scheffe, participants who reported “recommended practice” in the past 3 months were more knowledgeable than those who did not practice at all during that time. Also participants who practised according to recommendations in the past year were more knowledgeable about BSE than those, who reported “some practice” (see Table 5.11).

**Table 5.11. Factors of BSE Practice in Older Women in Scotland\***

<b>BSE Practice</b>	<b>FACTORS</b>	<b>F</b>	<b>df</b>	<b>p</b>	<b>Scheffe</b>
<b>Having ever practised</b>	Barriers	13.1	1	0.000	
	Cues for Action	18.8	1	0.000	
<b>Practice in short - term</b>	Knowledge BSE	7.9	2	0.000	1-3***
	Barriers	10.8	2	0.000	1-3*** 2-3***
<b>Practice in long - term</b>	Knowledge BSE	15.3	2	0.000	1-3*** 2-3***
	Barriers	16.2	2	0.000	1-3*** 2-3***

\* p < .05 level, \*\* p < .01 level, \*\*\* p < .001 level

\*NOTE: Only significant results at .01 or higher level of significance are presented  
[Key for Scheffe: 1 = No Practice, 2 = Some Practice, 3 = Recommended Practice (once a month)]

In the Logistic Regression Analysis, “having ever practised” was significantly predicted by barriers and cues for action. As a group these variables explained 21.2% of the variance, while the most powerful single predictor in the group was cues for action (Exp(B) = 0.793). The group showed high accuracy of prediction with 90.9% of participants being correctly classified. The highest predictive accuracy was found

for membership of the practisers' group (99.6% were correctly predicted as "having practised"). It is worth noting that barriers and cues for action showed an unusually high predictive accuracy. Barriers alone explained 9.6% and cues for action 13.6% of BSE practice variance. The factor, which independently explained the highest proportion of the variance, was cues for action.

Knowledge about BSE and barriers were the only significant predictors of "practice in past 3 months". As a group, they accounted for 14.3% of the practice variance. Knowledge about BSE independently explained 6.4% of the variance and barriers 7.9% respectively (see Table 5.12). The most powerful single predictor in the group was barriers, which displayed a higher correlation (Pearson's  $r$  coefficient) with the outcome variable ( $r = -0.281$ ,  $p = 0.000$ ) than knowledge did.

Knowledge about BSE and barriers were significant predictors of "practice in past year". As a group they explained 24% of the practice variance. Knowledge as an individual predictor explained 12.4% and barriers 11.7% of the variance (see Table 5.12). The most powerful predictor in the group was barriers, which produced a higher correlation with the outcome variable ( $r = -0.353$ ,  $p = 0.000$ ) than knowledge did.

**Table 5.12. Predicting BSE Practice in Older Women in Scotland**

BSE PRACTICE	PREDICTING VARIABLES	Model $\chi^2/F$	Model P/p	df	Nagelkerke $R^2$	Overall correctly classified <sup>1</sup> %	Practisers correctly classified <sup>2</sup> %	Non-practisers correctly classified <sup>3</sup> %	B	S. E.	Exp (B)
Having ever practised	Barriers	11.9	0.0006	1	0.096	89.9	99.6	0.0	0.2	0.1	1.263
	Cues for Action	17.0	0.00005	1	0.136	90.2	99.6	4.0	-0.2	0.1	0.786
	Barriers	27.0	0.00005	2	0.212	91.0	99.6	12.0	0.2	0.1	1.255
	Cues for Action								-0.2	0.1	0.793
Practice in short-term	Barriers	19.6	0.0005	1	0.079				-6.1	0.0	
	Knowledge BSE	15.8	0.0005	1	0.064				6.0	0.0	
	Barriers	18.9	0.0005	2	0.143				6.0	0.2	
	Knowledge BSE								-5.9	0.0	
Practice in long-term	Barriers	32.2	0.0005	1	0.124				-6.2	0.0	
	Knowledge BSE	30.1	0.0005	1	0.117				6.6	0.0	
	Barriers	35.6	0.0005	2	0.240				-6.0	0.0	
	Knowledge BSE								6.5	0.0	

[Key: 1 = overall percentage of participants who were predicted correctly, 2 = percentage of participants who were correctly predicted in the category of practisers, 3 = percentage of participants who were correctly predicted in the category of non-practisers]

### **5.5.2. Dimension Two: Culture and BSE**

For the investigation of the cross-cultural research questions, a sample of young women in Scotland and Greece was formed. The two sub-groups were stratified on age, using the stratified random sampling procedure (Dyer, 1995). This procedure aims at equal number of participants across groups. Before stratification, only participants who were students, single (never married), had no children, reported no personal history of malignant breast disease and no family history of breast cancer were included in the sample. This procedure enabled minimisation of the likelihood of differences between the two cultural groups, regarding demographic and health history. Participants who did not fit the above criteria or had missing data in age and any of the above variables were excluded from the sample. The remaining sample at this point consisted of 49 students in Scotland and 54 students in Greece. To stratify on age firstly both groups were described in terms of age by means of cross tabulation. Three age strata (18-20 years, 21-23 years and 24-26 years) were created. A random sample was taken from each strata (subdivisions obtained with the cross tabulation) for each sub-group, applying exactly the same sampling fraction to both the Scottish and the Greek sub-group. This procedure resulted in preserving the same proportions of British and Greek in each age group in the final sample ( $n = 68$ ). Out of 205 young women in Scotland (staff and students) a sub-section of 34 students were selected. Out of 85 students in Greece, 34 participants were selected.

Mean age for the total sample was 19.7 (SD = 1.8). Mean age for participants in Scotland was 19.3 (SD = 2.1). Mean age for participants in Greece was 20.2 (SD = 1.2).

Age stratification was used firstly because the objective risk of developing breast cancer is age-dependent (Metzlin, 1999; <http://www.cancerhelp.org.uk/help/default:>

Cancer Research UK, Breast Cancer Symptoms, Last updated 2002; Hellenic Anti-Cancer Institute, 2000). Secondly, previous research has suggested that perceived risk, other beliefs and adherence with breast care practices may differ according to age (e.g. Roberts et al., 1984; Grady et al., 1992).

#### **5.5.2.1. Comparing BSE Practice between Younger Women in Scotland and Greece**

Practice of BSE was assessed by the same variable in all studies. However, in the present study, short and long-term practice variables were transformed in two-fold variables (“practice close to recommendations” versus “practice not close to recommendations”). The aim was to facilitate meaningful comparisons between the two categories of practice and achieve global and more concentrated description of BSE in this particular sample. This is especially so, considering the lack of baseline information regarding BSE practice in young women in Greece.

Differences between the groups regarding adherence to BSE were examined by using  $\chi^2$  analysis. No significant differences were found between younger women in Scotland and Greece across practice variables (See Table 5.13).

**Table 5.13. Differences in BSE Practice between Younger Women in Scotland and Greece**

<b>Having ever practised</b>	<b>Younger Women in Scotland (n=34) (%)</b>	<b>Younger Women in Greece (n=34) (%)</b>	$\chi^2$	df	p
Have practised	18 (52.9%)	17 (50.0%)	0.030	1	0.866
Have not practised	16 (47.1%)	17 (50.0%)			
<b>BSE Practice in past 3 months (Short-term)</b>					
Practised closely to recommendations <sup>1</sup>	15 (44.4%)	15 (43.8%)	0.053	1	0.819
Practised irregularly / Not at all <sup>2</sup>	19 (55.6%)	19 (56.3)			
<b>BSE Practice in past year (Long-term)</b>					
Practised closely to recommendations <sup>3</sup>	14 (42.1%)	9 (27.8%)	0.833	1	0.362
Practised irregularly / Not at all <sup>4</sup>	20 (57.9%)	25 (72.2%)			

[Key: 1 = "twice/three or more times, 2 = once /not at all, 3 = once every other month/once a month, 4 = once/twice or not at all]

### **5.5.2.2. Comparing Young Women in Scotland and Greece in Knowledge, Health**

#### **Beliefs and Health-Related Personality**

The two cultural groups were compared in knowledge, health beliefs and personality by using one – way ANOVA. Statistically significant differences at the .01 and .001 level were found for knowledge about BSE, health value, susceptibility, active coping, internal HLOC, chance HLOC and powerful others HLOC (see Table 5.14).

**Table 5.14. Differences between Younger Women in Scotland and Greece in Knowledge, Health Beliefs and Health-Related Personality\***

<b>BY VARIABLE</b>	<b>Scotland (n=34) Mean (SD)</b>	<b>Greece (n=34) Mean (SD)</b>	<b>F</b>	<b>df</b>	<b>p</b>
<b>KNOWLEDGE VARIABLES</b>					
Knowledge about BC	2.4 (1.1)	3.0 (1.2)			
Knowledge about BSE	7.3 (3.0)	5.2 (1.9)	10.5	1	0.002
<b>HEALTH BELIEFS</b>					
Health Value	16.8 (3.9)	20.6 (3.3)	19.9	1	0.0005
Susceptibility	13.0 (2.0)	15.1 (1.9)	18.3	1	0.0005
Severity	14.5 (2.4)	14.7 (2.4)			
Health Motivation	17.8 (2.3)	16.8 (2.9)			
Cues for Action about BSE	19.0 (2.4)	18.3 (2.6)			
Benefits of BSE	20.2 (2.3)	17.0 (2.6)	29.2	1	0.0005
Barriers towards BSE	13.4 (3.0)	14.8 (2.8)			
<b>HEALTH – RELATED PERSONALITY</b>					
<b>COPING STYLES</b>					
Active Coping	11.4 (2.4)	13.7 (1.5)	19.7	1	0.0005
Acceptance	11.6 (2.2)	11.7 (1.9)			
Seeking Emotional Support	11.4 (2.9)	12.6 (2.3)			
Focusing/venting on Emotions	9.8 (3.1)	10.4 (2.8)			
Denial	7.8 (2.3)	7.8 (2.7)			
Alcohol/drug Use	5.3 (2.3)	5.1 (2.0)			
<b>HEALTH LOCUS OF CONTROL</b>					
Internal	24.2 (3.9)	19.1 (4.1)	25.7	1	0.0005
Chance	17.6 (3.9)	25.0 (4.4)	51.6	1	0.0005
Powerful Others	16.8 (5.7)	21.2 (4.0)	13.0	1	0.001
<b>AFFECTIVITY</b>					
Positive	32.5 (6.4)	33.7 (6.1)			
Negative	20.8 (8.2)	22.8 (5.8)			

[BC = Breast Cancer]

\*NOTE: Only results significant at the .01 and .001 level are presented

### 5.5.2.3. Comparing Factors of Close to Recommendations BSE Practice between Young Women in Scotland and Greece

Differences between the two cultural groups in relation BSE practice were examined using one-way ANOVA. Younger BSE practisers in Scotland scored lower in susceptibility, higher in benefits of BSE, lower in health value, higher in internal HLOC, lower in chance and powerful others HLOC and lower in active coping than BSE practisers in Greece (See Table 5.15).

**Table 5.15. Differences between Younger Women in Scotland and Greece in Factors of Close to Recommendations BSE Practice\***

Have practised	mean		F	df	p
	Scotland	Greece			
<b>BY VARIABLE</b>					
Susceptibility	12.5	15.2	23.5	1	0.0005
Benefits of BSE	20.7	16.8	31.6	1	0.0005
Health Value	16.5	21.0	13.5	1	0.001
Internal HLOC	24.2	18.0	19.6	1	0.0005
Chance HLOC	17.2	26.3	36.3	1	0.000
Powerful Others HLOC	15.4	20.7	10.4	1	0.003
Active Coping	11.2	13.9	14.3	1	0.001
<b>Practised closely to recommendations in past 3 months<sup>1</sup></b>					
Susceptibility	12.1	15.3	11.4	1	0.005
Internal HLOC	23.1	14.4	12.2	1	0.004
Chance HLOC	18.4	27.7	18.8	1	0.001
Powerful Others HLOC	14.5	21.4	19.7	1	0.001
Active Coping	10.1	13.1	8.5	1	0.012
<b>Practised closely to recommendations in past year<sup>2</sup></b>					
Susceptibility	12.3	15.4	8.7	1	0.015
Internal HLOC	23.5	18.4	12.4	1	0.005
Chance HLOC	17.5	26.2	13.4	1	0.004
Powerful Others HLOC	14.4	21.4	12.9	1	0.004

\*NOTE: Only significant results at .01 and .001 level of significance are presented

[Key: 1 = once/twice or once a month, 2 = once every other month / once every month]

The group in Scotland, who practised closely to recommendations in the past 3 months, scored lower in susceptibility, higher in internal HLOC, lower in chance and powerful HLOC and lower in active coping than the equivalent group in Greece (See Table 5.15).

## 5.6. Discussion

The present research aimed at exploring BSE practice between younger and older age groups and between different cultures. The findings regarding these dimensions are discussed as follows.



### **5.6.1. Dimension One: Age and BSE**

The findings of the present research can be summarised in the following points.

Firstly, BSE practice is explained by different factors across different time intervals.

Secondly, BSE practice is associated with different factors across age groups. It was

found that BSE attitudes, beliefs and practices differ across age groups.

BSE practice was found to be associated with knowledge and health beliefs, whereas demographics, health history and personality bear no association with practice.

Having ever performed BSE in younger women could be predicted from knowledge

about breast cancer, barriers, health motivation and cues for action, with knowledge

being the most powerful predictor. Practice in the past 3 months was associated with

knowledge about breast cancer, but this variable was not proven to be a significant

predictor. In the older group, having ever practised BSE was predicted from barriers

and cues for action, with the later being the most powerful predictor. Practice in the

past 3 months and in the past year was successfully predicted by the same factors:

knowledge about BSE and barriers. In both cases barriers were the most powerful

predictor.

The only health beliefs found to bear a significant association with BSE practice

across age groups were cues for action and barriers. In previous research, cues for

action have very rarely been found to be associated with BSE practice (e.g. Pitts et al.,

1991). However, assessment of BSE practice varied across studies and was usually

assessed by single time-frame variables. This inconsistency may have masked similar

effects of cues for action, which this study, by using three different practice variables,

was able to pick up. The barrier effect on practice was in agreement with previous

findings across age groups (e.g. Champion, 1984; Calnan & Rutter, 1986; Friedman et

al., 1994; Beckett et al., 1990; Salazar & Carter, 1994). Nevertheless, most studies

focusing on younger women have not found an association between barriers and practice (Cromer et al., 1992) with very few exceptions (Ronis & Kaiser, 1989). This could be due to differences in practice variables across studies and sample characteristics. Unlike previous findings (Schlueter, 1982; Beckett et al., 1990; Katz et al., 1995) susceptibility, severity, benefits and health motivation were not found to have any association with the behaviour.

Similarly to previous research, the present study has underlined the importance of knowledge (Hailey, 1986; Ronis & Kaiser, 1989). Different dimensions were related with each of the three practice variables examined and the relationship was always positive.

Younger and older participants were found to differ significantly in BSE practice. Unlike previous findings, where similar age cut-off points were used (Millar & Millar, 1992, in the present study older appeared as more likely to perform BSE). This disagreement could be attributed to differences in methodology for obtaining BSE frequency data. The criteria used to define the age groups varied across studies, resulting in a different meaning of the terms “older” and “younger”. In the present study, BSE uptake was assessed using three different variables. Also two broader – ranged age groups were examined, as opposed to other studies, which used more groups of smaller age intervals. Furthermore, in previous literature very rarely have women under thirty been included in the comparison along with older age groups (Millar & Millar, 1992). In addition to the above, the main body of studies have been carried out in the USA, whereas European findings are rather limited.

The two age groups also presented with significant differences in knowledge, health beliefs and health – related personality, unlike previous research (e.g. Massey, 1986; Millar & Millar, 1992). Differences in knowledge and health beliefs between the age

groups could be attributed to age itself. In fact, a quite large proportion of the older group was 50 years or older and thus eligible for the National Breast Screening Programme. This group might have been exposed to a more intense information flow, explaining their increased awareness, hence their compliance.

A number of weaknesses were also evident in the present research. Thus, the present research focused on university students and staff. The latter were also comprised of different categories of employees. Under-representation of domestic staff is explained by previous evidence that women of lower occupational status and educational level tend to be non-responsive to health research on women's issues (Guthrie et al., 1994; Woodruff, 1998). Nevertheless, BSE practice in the older group was controlled for type-of-job bias. Since BSE practice was not found to differ significantly by job category, it could be assumed that the older group was fairly homogenous in terms of BSE practice, as far as occupational status was concerned.

Another limitation of the present study refers to the differences between the women below and above thirty. Although age was used to define the two groups, the groups did not simply differ in age alone. There were other significant differences in demographics and health history. Nevertheless, these factors did not affect BSE practice in any of the groups. Also, age is not a plainly biological, but also a social factor. It is unavoidably accompanied with a number of changes in lifestyle, health and social circumstances.

The present study also failed to identify predictors of BSE practice of younger women in the past year. Therefore, further research on younger women's practice of BSE in the long – term needs to focus on variables not examined in the present study, e.g. perceived control over one's health, self – efficacy and confidence in one's ability to perform the behaviour. Moreover, there has been evidence in previous research that

the above variables might be associated with BSE practice (e.g. Cromer et al., 1989; Mamon & Zapka, 1986; Ronis & Kaiser, 1989; Katz et al., 1995).

Finally the small sample size and the high educational level of the participants are two limitations, which prevent generalisation of the present findings. This is not a prospective study and it is based on a sample of university students, which does not necessarily reflect the BSE attitudes and practices of the general population of Scottish women aged below 30.

### **5.6.2. Dimension Two: Culture and BSE**

In the present study BSE practice rates were higher than previously reported and there were no statistically significant differences in reported practice rates between the two groups. In addition, practice rates were very similar –almost identical- between the groups. Nevertheless, the two groups were found to differ significantly in knowledge levels, health beliefs, health-related coping styles, health locus of control beliefs and information – seeking. It was found that young women in Scotland were more knowledgeable about BSE than young women in Greece. The former also believed that their health was dependent more on their own actions than the latter. Women in Greece, on the other hand, valued their health more, felt more susceptible to breast cancer and were more active in their coping with health-related stress than women in Scotland. They also tended to believe that their keeping healthy was a matter of chance and that their health was the responsibility of the health professionals more than women in Scotland.

The present study has highlighted that, once age, education, marital status, parity, personal and family history of malignant breast disease are controlled for, young women in Scotland and Greece will not differ in their adherence to BSE recommendations. That is despite the two different health care and breast care

systems. Despite the similar adherence rates, they still differ in variables, which have been previously associated with adherence to preventive breast care. The two groups seem to arrive at the same result from different directions. Lack of systematic information flow regarding breast issues in Greece could be compensated for by certain personality cultural characteristics. In specific, Greeks may be lacking in BSE knowledge, in perceiving BSE as a beneficial behaviour and in internality, but they feel more susceptible to breast cancer, they put more value on their health and they cope more actively with health – related stressors. These characteristics might be able to make up for inadequacies of the health care system and provide enough motivation to practise the behaviour. Women in Scotland, on the other hand, may feel less susceptible to the disease, value their health less and even cope less actively with health issues, but they are exposed to organised information campaigns. Thus, they are more knowledgeable and they perceive BSE as more beneficial. In this case, lack of certain personality cultural characteristics might be compensated for by a more active breast care system.

The similar BSE practice rates between the two cultural groups could be due to the educational status of participants in both groups. Previous research has claimed that women in academic environments are likely to be in the vanguard of any major changes in health practices, because of their greater exposure to information and resources (Pitts et al., 1991). High educational status may also be responsible for the higher adherence rates found in our study, in relation to those reported by previous studies on young students (e.g. Pitts et al., 1991; Budden, 1995; Wardle et al., 1995). Practice rates in the Greek sample were also higher than those reported both by the limited previous research (Patistea et al., 1992) and health statistics (The state of women's health in the European Community, 1997). Inconsistency between the rates

reported by the present and previous relevant studies may also be due to differences in measurement of BSE frequency. In the present study we used a more sensitive and specific 3-time frame variable, as opposed to previous studies, where single frame variables were utilised (e.g. Wardle et al., 1995).

The differences in the factors of BSE practice may have implications for the improvement of BSE campaigns in the UK and the implementation of similar campaigns in Greece, tailored for the specific age group. Our findings might suggest the need for two shifts of the emphasis of BSE campaigns in general. The first shift should constitute a systematic attempt to target women's concerns, attitudes and cultural needs regarding BSE and breast cancer rather than simply boost adherence. The second shift should be an attempt to focus on younger as well as older age groups, regarding BSE beliefs and practice. Such attempts might be important in maintenance of practice in the long – term. In our study, despite the relatively high adherence rates, young women appear to hold certain attitudes and beliefs, that might endanger maintenance of practice in the long – term. In addition, there was a (non – significant) decrease in adherence rates within time (e.g. reported adherence was less frequent within a year).

Also, perceived susceptibility of breast cancer and internal health locus of control appeared important for both groups in association with BSE practice, but for different reasons for each group. Women in Greece tend to wrongly overestimate their risk to develop breast cancer, whereas women in Scotland to wrongly underestimate it, despite reported incidence rates. This discrepancy between objective and subjective (perceived risk) needs to be attended. A moderation of susceptibility levels accordingly for each country should be an objective for future campaigns. As far as

perceived benefits from practising BSE are concerned, it seems from the present findings, that in the UK, the campaigns on the effectiveness of preventive behaviours, and BSE in specific (Pitts et al., 1991), have reached their target. Scottish women were found more likely to perceive BSE as a beneficial practice, than Greek women, who have not been exposed to similar campaigns. Thus, future campaigns in Greece might aim to increase awareness about the advantages of the behaviour for young women, given the low BSE uptake in young women in Greece.

In the present study we have controlled for a number of demographics and health history variables, such as marital status, parity, personal history of breast disease (benign and / or malignant) and family history of breast cancer. These have been shown by previous studies to interfere with BSE beliefs and practice (Beckett et al., 1990; Wellisch et al., 1991; Millar & Millar, 1992; Murray & McMillan, 1993). However, despite their importance previous studies have failed to adequately consider and control for them in the investigation of BSE practice, like we did in the present study.

In the present study we have also highlighted the importance of culture as a factor in prioritising BSE practices. Cultural differences in BSE beliefs and health care experiences might be considered in promoting BSE in different countries, as well in different ethnic / cultural groups within the same country. This might be more relevant for multi-cultural societies, like Scotland / UK.

However, the study has a number of limitations, which affect generalisation of the findings. One of them is the small sample size. Another limitation is that the sample was skewed in terms of educational level, since it consisted only of young women in higher education. University students tend to be a rather homogeneous group with similar characteristics across cultures, and so our sample might not be representative

of the general population of young women in each country. Future research should take into account the above limitations and focus on larger and more representative cross-cultural samples within the EC, in order to verify the present findings.



## Chapter 6: Studies on Screening Mammography Attendance

### **Abstract**

**Aims.** The aim of the present research is twofold: (a) To explore attitudes and beliefs regarding screening mammography and identify predictors of breast screening attendance in Scotland and (b) To compare beliefs regarding mammography attendance between Scotland and Greece. **Sample.** Data were collected from 283 women who attended the National Breast Screening Programme in Central Scotland, 36 non-attenders, identified from a medical practice in Central Scotland, and 72 women undergoing mammography in Greece. **Measures.** Participants completed a questionnaire assessing demographics, health history, knowledge, health beliefs and health-related personality. Measures included multiple-choice knowledge questions, the Perceived Barriers sub-scale of the Health Belief Questionnaire, the Health Value Scale, a shortened version of the COPE questionnaire and a shortened version of the Melbourne Decision – Making Questionnaire. **Findings.** After controlling for age and education, attenders and non-attenders in Scotland differed significantly in their knowledge levels and in coping with health stresses. Attenders appeared to have more knowledge about breast cancer, more knowledge about mammography and to focus more on emotions, in order to cope with health stresses than non-attenders. The best predictor of breast screening attendance in Scotland was knowledge about mammography. Regarding cross – cultural differences, mammography attenders in Scotland appeared to have more knowledge about risk factors related to breast cancer and about mammograms. They also perceived significantly more pain / discomfort associated with the procedure than attenders in Greece. Attenders in Greece used more acceptance and denial and were more likely to seek emotional support, in order to cope with health stressors. Greek attenders were also more hypervigilant with

health-related decisions. **Conclusions.** The importance of knowledge as a factor affecting attendance of screening mammography is highlighted. The two cultural groups were significantly different in knowledge, worries about mammography and health-related personality, i.e. decision making and coping styles. These are believed to be culturally related to a certain extent.

## **6.1. Introduction**

Previous evidence on the pros and cons of screening mammography as well as factors associated with breast screening attendance were presented in chapter 2. The present chapter is based on a set of four research studies, carried out in Scotland and Greece. Their purpose is to explore research questions regarding attitudes towards and adherence to screening mammography.

## **6.2. Theoretical Background**

The theoretical model used in the present research incorporates components of the Health Belief (Becker et al., 1977b) and the Conflict Model (Janis & Mann, 1977) (See Figure 6.1.). The HBM has been presented in chapter 1. The Conflict Model of decision making is essentially a social psychological theory of decision making, which integrates cognitive and affective factors as components of the decision process. It is based on the assumption that stress, engendered by decisional conflict, is also a major determinant of failure to achieve adaptive decision making. The psychological stress arising from decisional conflict stems from at least two sources: (a) a concern about the severe personal, material and social losses that might be incurred whatever the chosen alternative and (b) a concern over loss of reputation and self – esteem if the decision process fails. According to the conflict model, there are basic patterns of coping with the conflict, generated by a potentially threatening decision. These include vigilance, hypervigilance, defensive avoidance and procrastination. Definitions of each of the above decision making styles have been presented in chapter 4, paragraph 4.3. According to Janis and Mann (1977), the presence or absence of three antecedent conditions determines reliance on particular coping patterns. These are: (a) awareness of serious risks about preferred alternatives,

(b) hope of finding a better alternative and (c) belief that there is adequate time to search and deliberate before a decision is required. Vigilance, for example, is dependent upon the fulfilment of the above three conditions, whereas defensive avoidance is triggered by the pessimistic belief that there is limited prospect of finding a suitable solution to the dilemma. It is also assumed that the same decision making patterns are in the repertoire of every decision maker. However, there are individual differences in the tendency to rely generally on the range of non-vigilant coping patterns (i.e. hypervigilance and defensive avoidance), in order to avoid or escape conflictual decisions. It has also been recognised that personal characteristics, such as coping style, and information-processing ability, have a major influence both on predisposition to use each pattern and frequency of usage (Janis & Mann, 1977; Janis, 1982).

On the basis of both the HBM and the Conflict Model, the variables examined in the present research as factors of screening mammography attendance include health beliefs, knowledge, health – related decision making and health – related coping style. The association between each of the above factors and screening mammography attendance is documented by previous research (see chapter 2 for a review of relevant literature), except from decision making. Research on decision making and mammography attendance has been limited, whereas existing results on mammography attendance and other health behaviours have been rather contradicting. It may be important to note that, in previous research, assessment of decision making was rarely guided by the Conflict Model (e.g. Melbourne Decision Making Questionnaire), as in the present research. Furthermore, the above factors have rarely been examined together in a single study, as regards practice of health behaviours, with a few exceptions. For example, Langer et al. (1997) have examined risky sexual

behaviour (i.e. not using condoms) of 120 substance abusing 13-21 year olds. Among the factors investigated in relation to the outcome variable were AIDS-related factual knowledge, attitudes to condom use, perceived vulnerability of AIDS and decision making style. They found that all the above variables were significant predictors of use of condoms. Nevertheless, White et al. (1994) examined the association between socio-demographics, knowledge and health beliefs with adherence to cervical screening, in a sample of 302 women, aged 20 to 66. Their results, however, have suggested no association between decision making style, as measured by the Melbourne Decision Making Questionnaire, and screening status.

There has also been evidence suggesting an association between decision making and the rest of the factors examined in the present research, i.e. health beliefs (Umeh, 1998), health value (Arora et al., 2000), knowledge (Langer et al., 1997) and coping style (Martinez et al., 2002). Such research also suggested interrelations amongst the above factors, decision making included, when examined in relation to health outcomes (e.g. patient participation in medical decision making in Arora et al., 2000; genetic testing for breast cancer gene mutations in Martinez et al., 2002). However, such studies were neither mammography – specific, nor always incorporated components of the Conflict Model.

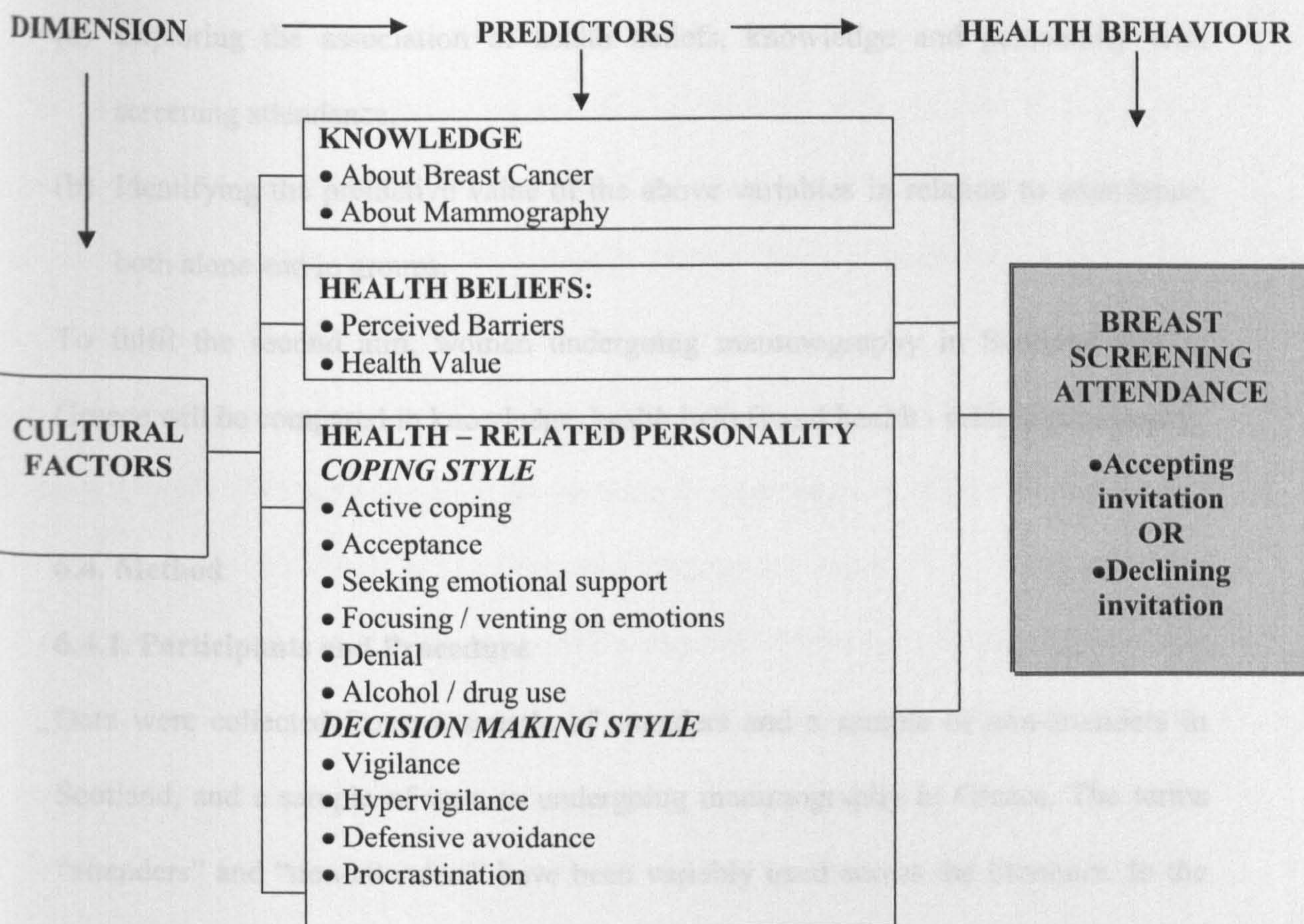
Finally, there is lack of cross - cultural studies on the association between mammographic screening attendance and decision making style, as defined by Janis and Mann (1977). Nevertheless, generic research on decision making has suggested that there are cross – cultural differences in decision making, especially between individualistic (e.g. Western) and collectivistic (e.g. Asian) cultures. The necessity of further cross – cultural research on decision making has also been acknowledged (Loo, 2000) by such research. Brew et al. (2001), for example, claimed that Chinese

students scored higher in avoidant and hypervigilant decision styles in comparison to Anglos (Australians) (n = 139). These results are also supported by cross – cultural research on decision making, using specifically the Melbourne Decision Making Questionnaire and the conflict theory. Indicatively, Mann et al. (1998) found that Asian students (originated from Japan, Hong Kong and Taiwan) tended to score higher on buck-passing and procrastination (avoidant styles) and hypervigilance, compared to Western students (originated from USA, Australia and New Zealand).

Considering the evidence presented above, the theoretical model, used in the present research (see Figure 6.1.), is based on the following assumptions:

1. Components of the HBM (Becker et al., 1977b) and the Conflict Model (Janis & Mann, 1977) are combined for the investigation of screening mammography attendance.
2. Decision making style, as measured by the Melbourne Decision Making Questionnaire (Mann et al., 1997), is introduced as a factor of mammography attendance.
3. Decision making style is examined amongst other factors of mammography attendance within a multi-factorial context.
4. A cross-cultural dimension is introduced both to mammography attendance and its association with decision making style (Mann et al., 1998).

**Figure 6.1. The Multi-Factorial Model for Screening Mammography Attendance**



### 6.3. Aims

The aims of the present research are:

1. To explore attitudes and beliefs regarding screening mammography as well as to identify factors of breast screening attendance in Scotland.
2. To compare beliefs regarding mammography between Scotland and Greece.

In order to achieve the first aim:

- Perceived barriers to mammography attendance in attenders and non-attenders in Scotland will be identified.
- Knowledge levels in relation to breast cancer and mammography between attenders and non-attenders will be compared.

- Factors of breast screening attendance in Scotland will be investigated by:
  - (a) Exploring the association of health beliefs, knowledge and personality with screening attendance.
  - (b) Identifying the predictive value of the above variables in relation to attendance, both alone and in groups.

To fulfil the second aim, women undergoing mammography in Scotland and in Greece will be compared in knowledge, health beliefs and health - related personality.

## **6.4. Method**

### **6.4.1. Participants and Procedure**

Data were collected from: a sample of attenders and a sample of non-attenders in Scotland, and a sample of women undergoing mammography in Greece. The terms “attenders” and “non-attenders” have been variably used across the literature. In the present study, “attenders” are considered these women who attended the 1999 breast screening round. “Non-attenders” are considered these women who did not participate in the 1995 round of the Scottish Breast Screening Programme, as they declined an invitation to attend.

Data from the attenders were collected in the M<sup>11</sup> mobile unit (Glasgow Breast Screening Programme) in Stirling, Central Scotland, during the June 1999 screening round. The questionnaire, which was accompanied by a brief information letter (see Appendix IV), was administered to women by the principal researcher, while they were waiting to be screened. From a total of 500 attenders who were approached, 283 returned the completed questionnaire (response rate 56.6%). A prepaid self - addressed envelope was provided for returning the questionnaire. Women who decided to participate were given the choice either to take the questionnaire with them



and post it back when ready, or complete it at their waiting time and return it directly to the researcher. Two alternative methods of returning questionnaires were provided, in order to encourage participation and thus increase the response rate. However, the majority of respondents (95.8%) completed the questionnaire during waiting time and only 12 out of 283 chose to post it back (4.2%). Such a small percentage is not expected to have any effect on the data.

Mean age of attenders was 57 years (SD = 5.10, mode = 52, median = 56). The majority (91.2%) was aged 50 to 64 years (in the age range, at which women receive an invitation for National Breast Screening Programme) and 5.6% (n = 17) were over 64 (women, who can still be screened on request). Because of the inclusion of the latter, this not a pure screening attenders' sample. However, a number of measures have been taken to make sure that inclusion of these participants (n = 17) in the sample did not affect the data. Firstly, uni-variate analysis revealed no differences between those invited and those attended on their request, regarding health beliefs, personality, demographics (apart from age), health and previous screening history. Secondly, these parts of the statistical analysis, which involved attenders of this age group (aged > 64 years) (see sections 6.5.1 and 6.5.3), were run twice, first with them included and subsequently with them excluded. Results were not different between the two analyses. Thirdly, in the stratified on age and education sample of attenders and non-attenders, which was used to examine predictors of attendance (see section 6.5.2), no attenders aged over 64 years old were included. For the above reasons, this age group was not excluded. Breast screening history of the attenders' sample is illustrated on Table 6.1. Demographics and health history are shown in Table 6.2.

**Table 6.1. Breast Screening History of Mammography Attenders in Scotland**

<b>Breast Screening History</b>	<b>n (%)</b>	<b>Categories</b>	<b>n (%)</b>
<b>First-time attenders</b>	86 (30.4%)	First invitation ever received	75 (26.5%)
		Have received invitation(s) before	11 (3.9%)
<b>Attended more than once</b>	190 (67.1%)	Second attendance	87 (30.7%)
		Third attendance	92 (32.5%)
		Have attended more than three times before	11 (3.9%)
<b>No answer</b>	7 (2.5%)		7 (2.5%)
<b>Total</b>	283 (100%)		283 (100%)

Data from non – attenders were obtained from a Medical Practice in Central Scotland. Participants were registered with the practice. According to their medical records, they had been invited but did not attend the 1995 National Breast Screening Programme (4 years prior to assessment). A package, containing the questionnaire and an information letter from the researchers (see Appendix V), was posted to the women together with a letter from their GP (see Appendix VII). In this letter their GP informed those women about the breast screening service, emphasised the importance of screening mammography as a method of early detection, noted that they did not attend the last round and encouraged them to attend next time. The GP also mentioned in the letter that the practice was taking part in the present research project and kindly asked the women's participation to complete and return the enclosed questionnaire. The questionnaire was returned directly to the researchers in a prepaid self – addressed envelope. Two weeks after the first questionnaire was posted to the women, all participants were sent a reminder letter (see Appendix VIII) along with another copy of the same questionnaire to complete if they had not completed the first issued questionnaire. After the reminder, out of 73 non-attenders originally approached, 36 finally returned the completed questionnaire (response rate 49.3%). A member of the practice staff collected demographic and health history data for those who responded from the practice records. These data were anonymised before having been passed on

to the researcher. Using identifying numbers demographic and medical data were matched with the questionnaire data. Mean age of the non-attenders was 61 years (SD = 5.0, median = 60, mode = 55, range 53-68). The sample consisted of 22.2% (n = 8) participants aged over 64 years at the time of assessment. However, given the age range of this small proportion (66 to 68 years), we can conclude that they had turned 64 within the 4 - year interval between receipt of their invitation for the 1995 screening round and time of assessment for the present research (1998). The sample was also skewed in terms of educational level, since 55.6% of the participants were university educated and 19.4% had even a postgraduate degree (See Table 6.2). The skewedness could also be attributed to the small sample size. These data were derived from one medical practice in a small area, which is also considered as a high socio-economic status area. As a consequence it is unlikely to be representative of the population of non-attenders in Scotland.

Although a sample of 36 non-attenders appears rather small, this is due to the difficulties involved not only to approach but also to obtain responses from a clinical population, which is considered as generally unresponsive to health – related initiatives (e.g. postal invitation to attend for screening). Due to the above difficulties, small samples were not uncommon in previous studies as well. There is evidence that non-compliant with health recommendations women are less likely to respond to postal questionnaires for participation in health – related research (Guthrie et al., 1994; Woodruff, 1998). Moreover, Rimer and colleagues (1988) have claimed that non-attenders are less likely to read information material regarding mammography, as they find it too complicated and long.

**Table 6.2. Demographic Background and Health History of Attenders and Non-Attenders in Scotland**

<b>DEMOGRAPHIC VARIABLES</b>	<b>CATEGORIES</b>	<b>Attenders n = 283 (%)</b>	<b>Non – Attenders n = 36 (%)</b>
<b>Ethnicity</b>	British	273 (96.4%)	29 (80.6%)
	Non-British	5 (1.8%)	0 (0.0%)
	No Answer	5 (1.8%)	7 (19.4%) *
<b>Marital Status</b>	Married/Cohabiting	218 (77.0%)	21 (58.3%)
	Divorced/Separated	22 (7.8%)	4 (11.2%)
	Widowed	23 (8.1%)	3 (8.3%)
	Single	15 (5.3%)	1 (2.8%)
	No Answer	5 (1.8%)	7 (19.4%) *
<b>Education</b>	Basic Education / A' Levels / O' Levels	105 (37.1%)	0 (0.0%)
	College / Equivalent	44 (15.5%)	2 (5.6%)
	University Degree	54 (19.1%)	20 (55.6%)
	Postgraduate Degree	13 (4.6%)	7 (19.4%)
	No Answer	67 (23.7%)	7 (19.4%) *
<b>No. of Children</b>	None	30 (10.6%)	3 (8.3%)
	One	36 (12.7%)	3 (8.3%)
	Two	128 (45.2%)	13 (36.2%)
	Three	55 (19.4%)	8 (22.2%)
	More than three	26 (9.3%)	2 (5.6%)
	No Answer	8 (2.8%)	7 (19.4%) *
<b>Family History of BC</b>	Yes	48 (17.0%)	4 (11.1%)
	No	234 (82.7%)	31 (86.1%)
	Have no idea	1 (0.3%)	0 (0.0%)
	No Answer	0 (0.0%)	1 (2.8%)

\*Note: These (n=7) are the same participants, giving no answer in any of the following, i.e. ethnicity, marital status, education and no. of children

In addition, data from 72 Greek attenders were obtained from the "Galinos" Medical and Diagnostic Centre in Ioannina. Mean age was 47 years (SD = 6.1, median = 47, mode = 49, range 33-67). This is a semi-private centre, where women with all types of medical care can be seen. It is situated close to the city centre. The same questionnaire as in the previous two samples - translated in Greek- was given to women who came for mammography by the receptionist at their arrival to the Mammography Unit. The receptionist was briefly trained, in order to inform about the purpose of the study, provide assistance with completion, if required, and report back to the researcher. The questionnaire was completed during their waiting time and was handed back to the receptionist. Out of 72 participants, who completed the questionnaire, a stratified sub-group of 29 were selected for the analysis. This sub-group (n = 29) was used for the formation of a sample of mammography attenders in

Scotland and in Greece and was used for the analysis of the cross-cultural research questions.

The previously presented samples were used to tackle a number of research questions, regarding different aspects of screening mammography attendance (see Table 6.3.).

**Table 6.3. Research Questions explored By Sample**

<b>Samples (n)</b>	<b>Research Questions Examined</b>
<b>EXPLORING ATTITUDES AND KNOWLEDGE ABOUT SCREENING MAMMOGRAPHY ATTENDANCE IN SCOTLAND</b>	
n = 283 attenders in Scotland	<b>Exploring Attitudes and Knowledge Levels</b> 1.Barriers towards screening mammography in women, who attend and women who do not attend the National Breast Screening Programme in Scotland 2.Knowledge about breast cancer and mammography in attenders and non-attenders in Scotland
n = 36 non-attenders in Scotland	
<b>EXPLORING FACTORS ASSOCIATED WITH BREAST SCREENING ATTENDANCE IN SCOTLAND AND IDENTIFYING PREDICTORS</b>	
n = 58 Stratified sample of attenders (n = 29) and non-attenders (n = 29) in Scotland	<b>Predicting Screening Mammography Attendance</b> 1.The role of health beliefs, knowledge and health-related personality in screening mammography attendance 2.Factors of screening mammography attendance in Scotland
<b>EXPLORING CULTURAL FACTORS REGARDING MAMMOGRAPHY ATTENDANCE</b>	
n = 52 Stratified sample of women who attended for mammography in Scotland (n = 26) and in Greece (n = 26)	<b>Exploring a Cultural Dimension in Mammography Attendance</b> Comparison between women who attend for mammography in Scotland and in Greece, in knowledge, health beliefs, and health-related personality

#### 6.4.2. Materials

Assessment was made by use of a seven – part questionnaire (see Appendices IV, V and VI), which included the following measures:

1. Three multiple – choice questions assessing knowledge about breast cancer (risk factors, age when risk substantially increases and breast lumps) and one multiple - choice question assessing knowledge about the effectiveness of mammograms. The question about mammography consisted of a set of 4 statements (e.g. “Mammography will detect a lot of non-cancerous breast problems, some of which may never have been detected otherwise” True, False, Do not know). Correct answers scored 1 (range

0-4). Correct answers are shown in Table 6.6. All the above questions included a few reversibly scored items (see Materials in chapter 5).

2. The Barriers sub – scale (6 items) of the self- devised Health Belief Questionnaire (see Materials in chapter 5). The barriers towards screening mammography sub-scale included both practical/logistic barriers, e.g. “Trouble with transportation would keep me from having a mammogram”, and psychological/emotional, e.g. “Having a mammogram could be embarrassing”, according to the categorisation used by Sheeran and colleagues (1996). Non-attenders were asked an additional open-ended question, measuring self – reported reasons for non – attendance, i.e. “Please could you tell us why you did not attend your last invitation for the National Screening Programme?”. These are defined as “non-standard” barriers, as opposed to “standard barriers” measured, as a HBM construct in the present thesis. Content analysis was used to code the answers to the open question about barriers. Participants scored 1 for each additional barrier mentioned and 0 if no additional barriers was mentioned.

3. The Health Value Scale (4 items) (see Materials in chapter 5).

4. A shortened version (12 items) of the COPE questionnaire (sub - scales 1, 4, 9, 10, 11, 14) (see Materials in chapter 5).

5. A shortened amended version (12 items) of the Melbourne Decision – Making Questionnaire by Mann et al. (1997). This is the validated and standardised version of the original Flinders Decision Making Questionnaire (Mann, 1982). The decision - making styles included are vigilance, e.g. “I take a lot of care before choosing”, hypervigilance, e.g. “Whenever I face a difficult decision I feel pessimistic about finding a good solution”, buck-passing/defensive avoidance, e.g. “I prefer to leave decisions to others” and procrastination, e.g. “I delay making decisions until its too late”. In the present research, the original instructions were slightly altered to apply to

health-related decisions only. Also the answer scale, instead of the original 3-point one, was converted into a 4-point scale (e.g. “When making decisions about my health, I usually don’t do this at all” to “When making decisions about my health, I usually do this a lot”). This alteration was made for reasons of consistency (4-point answer scales were mostly used in the present thesis) and because previous evidence suggested that the 3-point scale may have obscured the detection of real, albeit small differences (White et al., 1994). High intercorrelations between sub-scales and high Cronbach’s alpha for each sub-scale have been documented by previous research on cervical screening (White et al., 1994). An alpha coefficient for the global score for the present research is 0.70 and 0.61 to 0.71 across sub-scales. Moderate reliability coefficients were obtained due to the small number of items per sub - scale. Intercorrelations between sub-scales were low to moderate, ranging from 0.384 ( $p = 0.002$ ) to 0.589 ( $p = 0.0005$ ), indicating that shortening of the scale might have an effect on internal consistency.

## **6.5. Results**

### **6.5.1. Exploring Attitudes, Beliefs and Knowledge regarding Screening Mammography in Attenders (n = 283) and Non-Attenders (n = 36)**

#### **6.5.1.1. Analysis of Barriers in Attenders and Non - Attenders in Scotland**

The most frequently reported barrier in relation to mammography in both attenders and non-attenders was pain and discomfort. However, for rest of barriers the order was different between attenders and non – attenders. In the attenders, pain / discomfort was followed by fear of radiation and embarrassment, difficulties to take time off work and fear of unnecessary surgery and transportation difficulties. In the

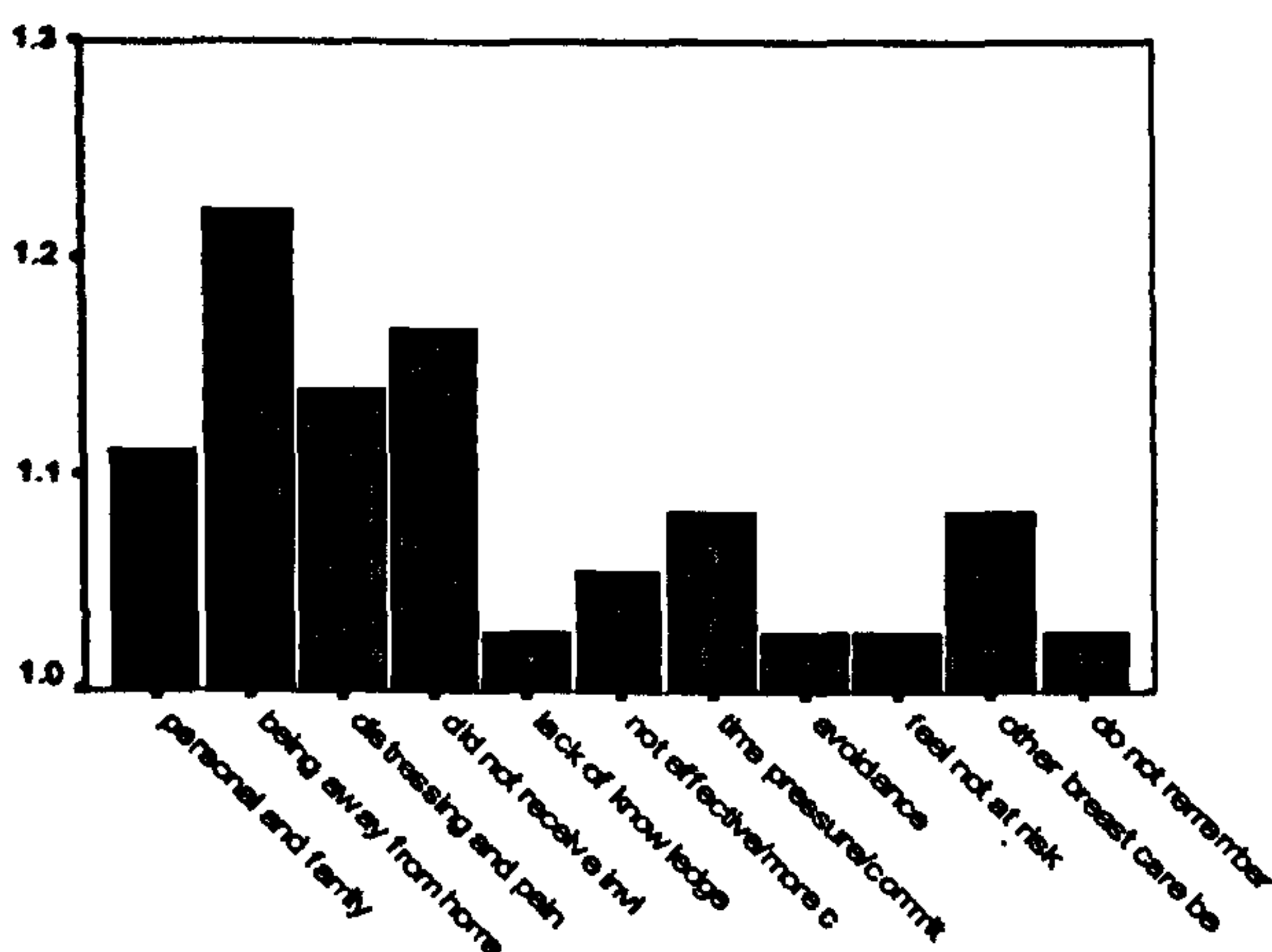
non – attenders, pain / discomfort was followed by fear of radiation and unnecessary surgery, difficulties at work, transportation problems and finally embarrassment (see Table 6.4.).

**Table 6.4. Barriers (Total and Individual)**

	range	Attenders (n = 283)		Non-Attenders (n = 36)	
		Mean	SD	Mean	SD
<b>Barriers (Total)</b>	6-24	9.0	3.3	11.5	3.7
<i>Transportation Problems</i>	1-4	1.2	0.6	1.4	0.7
<i>Pain/discomfort</i>	1-4	2.2	1.1	2.3	0.9
<i>Radiation</i>	1-4	1.4	0.8	2.0	0.1
<i>Embarrassment</i>	1-4	1.4	0.8	1.1	1.0
<i>Time off work</i>	1-4	1.3	0.7	1.7	1.1
<i>Unneeded surgery</i>	1-4	1.3	0.7	2.0	0.8

The most frequently self – reported reason for non-attendance was “being away from home” (22.2%) (See Bar Chart 6.1.).

**Bar Chart 6.1. Self – reported Reasons for Non- Attendance (Non standard Barriers)**



**Key:**

- 1 = "personal and family problems" (11.1%)
- 2 = "being away from home" (22.2%)
- 3 = "mammogram is distressing and painful" (13.9%)
- 4 = "did not receive invitation" (16.7%)
- 5 = "lack of knowledge" (2.8%)
- 6 = "mammogram is not effective" (5.6%)
- 7 = "time pressure/too many commitments" (8.3%)
- 8 = "avoidance" (2.8%)
- 9 = "not feeling at risk" (2.8%)
- 10 = "other methods of breast care are enough" (8.3%)
- 11 = "did not remember" (2.8%)

### 6.5.1.2. Knowledge of Attenders (n = 283) and Non-Attenders (n = 36) in Scotland regarding Breast Cancer and Mammography

Knowledge about breast cancer for each group is described in Table 6.5. Knowledge about mammograms is presented in Table 6.6.



One sample t-test was performed to make within group comparisons between knowledge about breast cancer and knowledge about mammograms. Attenders manifested higher level of knowledge about mammography than about breast cancer ( $t = -6.2$ ,  $df = 264$ ,  $p = 0.000$ ). Mean knowledge about breast cancer was 2.5 (SD = 1.0), whereas mean knowledge about mammograms was 3.0 (SD = 0.9). On the contrary, non-attenders were more knowledgeable about breast cancer than about the effectiveness of mammography ( $t = 11.1$ ,  $df = 33$ ,  $p = 0.000$ ). Mean knowledge about breast cancer was 1.8 (SD = 0.9) and mean knowledge about mammograms was 1.3 (SD = 0.8).

**Table 6.5. Knowledge about Risk Factors for Breast Cancer and about Breast Lumps in Attenders and Non-Attenders in Scotland**

	Attenders (n = 283)			Non-Attenders (n = 36)		
	Agree	Disagree	No Answer	Agree	Disagree	No Answer
Being single ("Agree" = correct)	18 (6.4%)	264 (93.3%)	1 (0.3%)	1 (2.7%)	34 (94.5%)	1 (2.8%)
Married without children ("Agree" = correct)	27 (9.5%)	256 (90.5%)	0 (0.0%)	4 (11.1%)	30 (83.3%)	2 (5.6%)
Married with children (Disagree = correct) RS	25 (8.8%)	258 (91.2%)	0 (0.0%)	2 (5.5%)	33 (91.7%)	1 (2.8%)
Having had a hysterectomy (Disagree = correct) RS	10 (3.5%)	273 (96.5%)	0 (0.0%)	1 (2.7%)	34 (94.5%)	1 (2.8%)
Having relatives with BC ("Agree" = correct)	251 (88.7%)	32 (11.3%)	0 (0.0%)	30 (83.3%)	5 (13.9%)	1 (2.8%)
Being past menopause ("Agree" = correct)	98 (34.6%)	185 (65.4%)	0 (0.0%)	11 (30.5%)	24 (66.7%)	1 (2.8%)
Being on the pill (Disagree = correct) RS	71 (25.1%)	212 (74.9%)	0 (0.0%)	10 (27.8%)	25 (69.4%)	1 (2.8%)
Having been hit on the breast (Disagree = correct) RS	55 (19.4%)	228 (80.6%)	0 (0.0%)	4 (11.1%)	31 (86.1%)	1 (2.8%)
Do not know	19 (6.7%)	264 (93.3%)	0 (0.0%)	2 (5.5%)	33 (91.7%)	1 (2.8%)
<b>KNOWLEDGE ABOUT BREAST LUMPS</b>						
Most breast lumps are cancerous (Disagree = correct) RS	12 (4.2%)	271 (95.8%)	0 (0.0%)	0 (0.0%)	36 (100.0%)	0 (0.0%)
Most breast lumps are not cancerous ("Agree" = correct)	252 (89.0%)	31 (11.0%)	0 (0.0%)	33 (91.7%)	3 (8.3%)	0 (0.0%)
Do not know	19 (6.7%)	264 (93.3%)	0 (0.0%)	3 (8.3%)	33 (91.7%)	0 (0.0%)

[Key: RS = reversibly scored item]

**Table 6.6. Knowledge about Mammography Effectiveness in Attenders and Non-Attenders in Scotland**

	Attenders (n = 283)				Non-Attenders (n = 36)			
	Agree	Disagree	Do not know	No Answer	Agree	Disagree	Do not know	No Answer
<b>Mammograms detect non-cancerous problems</b> ("Agree" = correct)	204 (72.1%)	19 (6.7%)	53 (18.7%)	7 (2.5%)	26 (72.2%)	0 (0.0%)	9 (25.0%)	1 (2.8)
<b>One clear mammogram is not enough</b> ("Agree" = correct)	4 (1.5%)	269 (95.0%)	2 (0.7%)	8 (2.8%)	0 (0.0%)	32 (89.0%)	2 (5.5%)	2 (5.5%)
<b>Mammogram can find BC up to 2 years before symptoms</b> ("Agree" = correct)	198 (69.9%)	24 (8.5%)	54 (19.1%)	7 (2.5%)	18 (50.1%)	2 (5.5%)	14 (38.9%)	2 (5.5%)
<b>Mammography is more accurate in young women</b> ("Disagree" = correct) <b>RS</b>	16 (5.7%)	169 (59.7%)	90 (31.8%)	8 (2.8%)	2 (5.5%)	14 (38.9%)	17 (47.2%)	3 (8.4%)

[Key: RS = reversibly scored item]

### 6.5.2. Exploring Breast screening Attendance in Scotland

A sample of 58 Scottish women, 29 attenders and 29 non-attenders was formed (See Table 6.7.). This sample resulted from the integration of a sub-group of the sample of attenders ( $n = 283$ ) and a sub-group of the sample of non-attenders ( $n = 36$ ). From the non – attenders' group 29 participants were included (the rest were excluded, due to missing data). Out of the 283 attenders, who completed the questionnaire, a sub-group of 29 participants were selected, using the stratified random sampling procedure (Dyer, 1995).

Stratification was used to control for education and age differences between the two groups. The two sub-samples were stratified on age and education. These two variables have been selected, firstly, because previous research has suggested an association between age and mammographic attendance (Calle et al., 1993; Webber et al., 1996; Champion & Miller, 1996; Danigelis et al., 1996). Secondly, age is an eligibility criterion for screening mammography. Thirdly, sociodemographic factors, especially education, have been found to affect adherence to breast care recommendations, e.g. breast self – examination (Ronis & Harel, 1989; Cromer et al., 1989) and mammography attendance (Rimer, 1992; Price, 1994; Champion & Miller, 1996). Before stratification, missing data on those two variables were excluded. To stratify on age and education, both groups (attenders  $n = 283$  and non-attenders  $n = 29$ ) were cross - tabulated in those two variables. Then, a random sample was taken from each strata (subdivisions obtained with the cross tabulation) in the attenders group, applying the same sampling fraction in the non-attenders group. This procedure resulted in preserving the same proportions of attenders in age and education, as in non-attenders in the final joined sample ( $n = 58$ ). After sample extraction, no statistically significant differences between the sub-samples in marital

status, number of children and family history of breast cancer were detected (see Table 6.7).

**Table 6.7. Demographic Background and Health History of Stratified Sample of Attenders / Non-Attenders in Scotland (n = 58)**

DEMOGRAPHIC VARIABLES		Attenders n = 29 (%)	Non- Attenders n = 29 (%)	$\chi^2$	df	p
<b>Marital Status</b>	Married/ Cohabiting	23 (79.3%)	21 (72.4%)	1.9	3	0.596
	Divorced/ Separated	2 (6.9%)	4 (13.8%)			
	Widowed	2 (6.9%)	3 (10.3%)			
	Single	0 (0.0%)	1 (3.4%)			
	No Answer	2 (6.9%)	0 (0.0%)			
<b>No. of Children</b>	None	0 (0.0%)	3 (10.3%)	4.2	4	0.375
	One	4 (13.8%)	3 (10.3%)			
	Two	15 (51.7%)	13 (44.8%)			
	Three	6 (20.7%)	8 (27.6%)			
	More than three	4 (13.8%)	2 (6.9%)			
<b>Family History of BC</b>	Yes	4 (13.8%)	4 (13.8%)	0.0	1	1.000
	No	25 (86.2%)	25 (86.2%)			

#### 6.5.2.1. Comparison between Attenders and Non-Attenders in Health Beliefs, Knowledge, and Health – Related Personality

One – way ANOVA was used to compare the two groups in the following variables: perceived barriers, health value, knowledge about breast cancer and about mammography, and health-related personality. Statistically significant differences between attenders and non - attenders were found in use of focusing and venting on emotions, total knowledge about breast cancer and total knowledge about mammography (see Table 6.8.).

**Table 6.8. Statistically Significant Differences between Attenders and Non – Attenders in Scotland \***

BY VARIABLE		Mean	F	df	p
Focusing/venting on emotions	Attenders	5.3	50.1	54	0.0005
	Non - Attenders	3.3			
Total knowledge about BC	Attenders	2.5	8.6	54	0.005
	Non - Attenders	1.7			
Total knowledge about mammography	Attenders	3.0	58.2	55	0.0005
	Non - Attenders	1.2			

\* NOTE: Only significant results are presented

### **6.5.2.2. Factors of Screening Mammography Attendance in Scotland (Stratified Sample of Attenders and Non-Attenders in Scotland, n = 58)**

This question entails an investigation of the relationship between a dependent variable, dichotomised in terms of behavioural outcome, and a series of predictor variables. The aim of this section is to identify factors, which discriminate between women who attend and women who do not attend for screening mammography. Univariate tests (one - way ANOVA) were used to cut down the number of predictors. Only variables that produced statistically significant results in the univariate tests entered the Logistic Regression analysis.

It was found that focusing/venting on emotions was a significant independent predictor and explained 63.3% of the attendance variance. Total knowledge about breast cancer and total knowledge about mammography were also significant independent predictors of attendance and explained 19% and 64.7% of the attendance variance respectively. All the above variables as a group successfully predicted attendance and explained 82% of the variance, while the most powerful single predictor was total knowledge about mammography ( $\text{Exp(B)} = 0.068$ ). All three outcome variables showed high accuracy of prediction with 88.9% of participants being correctly classified as attenders or non-attenders, with the highest predictive accuracy being found for membership of the group of non-attenders (92.3% of non-attenders were correctly classified). The two knowledge variables together accounted for 64% of the variance (see Table 6.9.). The most powerful single predictor amongst the two was total knowledge about mammography ( $\text{Exp(B)} = 0.101$ ).

**Table 6.9. Predicting Breast Screening Attendance in Scotland**

**TOTAL SAMPLE (n = 59)**

BY VARIABLE(S)	Model $\chi^2$	df	Model P	Nagelkerke R <sup>2</sup>	Overall correctly classified <sup>1</sup> %	Attendees correctly classified <sup>2</sup> %	Non - Attendees correctly classified <sup>3</sup> %	B	S. E.	Exp(B)
Focusing/venting on emotions	36.0	1	0.00005	0.633	85.7	78.6	92.9	-1.947	0.507	0.143
Tot. Knowledge about BC	8.7	1	0.0032	0.191	71.4	55.1	88.9	-0.819	0.320	0.441
Tot. Knowledge about mammography	37.8	1	0.00005	0.647	78.9	65.5	92.9	-2.179	0.566	0.113
Focusing/venting on emotions	51.1	3	0.00005	0.816	88.89	85.71	92.3	-1.791	0.638	0.167
Tot. Knowledge about BC								0.582	0.482	1.790
Tot. Knowledge about mammography								-2.690	1.035	0.068
Tot. Knowledge about BC	36.6	2	0.00005	0.640	82.1	72.4	92.6	0.158	0.378	1.171
Tot. Knowledge about mammography								-2.294	0.655	0.101

[Key: 1 = overall percentage of participants who were predicted correctly either as attendees or non-attendees, 2 = percentage of participants who were correctly predicted in the category of attendees, 3 = percentage of participants who were correctly predicted in the category of non-attendees ]

### 6.5.3. Exploring Cultural Influences in Mammography Attendance

A sample of 52 women, who attended for mammography, half in Scotland and half in Greece, was formed. The mean age for participants of the total sample was 52.0 (SD = 3.2, range 47-59). Mean age for British attenders was 52.7 (SD = 2.0, range 50-55). Mean age for Greek attenders was 51 years (SD = 4.0, range 47-59). Demographics and health history by group are shown in Table 6.10.

The sample resulted from the integration of a sub-group from the sample of attenders in Scotland and a sub-group from the sample of women who underwent mammography in Greece. Out of 283 British attenders, a sub-group of 26 participants were selected, while out of 72 Greek attenders, 26 participants were selected, using the stratified random sampling procedure (Dyer, 1995). The two sub-groups were stratified on age and education (see paragraph 6.2). Before stratification, missing data on those two variables were excluded. Then both samples (British  $n = 283$  and Greek  $n = 72$ ) were cross - tabulated for those two variables. A random sample was taken from each of the strata (subdivisions obtained with the cross tabulation) in the British sample, applying the same or as close as possible to the sampling fraction, described in the Greek sample. When any strata in any of the samples had been relatively smaller or larger than the corresponding strata in the other sample, then a different proportion was taken. This procedure enabled to control for effects of non - data response and resulted in preserving the same or similar proportions in British and Greek, regarding age and education. The two sub-groups did not differ significantly in demographics, family history of breast cancer and previous mammography experience (see Table 6.10).

Nevertheless, attendance in Scotland and Greece might differ in two respects, i.e. cost of mammography and reason / motivation for attending. Firstly, in Scotland



mammography is free as part of the National Breast Screening Service. In Greece, since there is no national breast - screening programme, mammography is just another medical/diagnostic test. Such tests are financially covered by different medical/health insurance bodies. Eligibility to join these bodies depends on type of occupation and income. Some insurance bodies cover the cost of mammography fully on behalf of the patient (the State Medical Insurance, the Medical Insurance for Council Workers – ΤΥΔΥ and the Institute of Social Security medical insurance – ΙΚΑ), some cover the cost partially and the patient pays the difference (a patient on ΤΕΒΕ medical insurance pays the 25% of the total cost), while others do not cover the test at all and the patient has to pay the total cost (e.g. ΟΓΑ, ΤΣΑ, Bank Medical Insurance). The State Medical Insurance and the Institute of Social Security (ΙΚΑ) are the most frequently encountered ones. These two cover fully the cost of mammography.

Thus mammography costs were fully covered for 88.5% (n = 23), 7.7% (n = 2) were partially covered (paid only the 25%) and 3.8% (n = 2) were not covered at all. Secondly, Greek attenders were referred by their doctor (physician or specialist) following a specific breast complaint (n = 1, 4.2%) or for preventative reasons (doctor's initiative) (n = 9, 37.5%) or they requested the test themselves either following a breast complaint (n = 5, 20.8%) or for prevention (patient's initiative) (n = 9, 37.5%).

**Table 6.10. Demographic Background and Health History of Stratified Sample of Mammography Attenders in Scotland and Greece (n = 52)**

DEMOGRAPHIC VARIABLES	CATEGORIES	Attenders in Scotland n = 26 (%)	Attenders in Greece n = 26 (%)	$\chi^2$	df	p
<b>Marital Status</b>	Married/Cohabiting	17 (65.4%)	25 (96.2%)	7.5	3	0.57
	Divorced/Separated	2 (7.7%)	0 (0.0%)			
	Widowed	3 (11.5%)	0 (0.0%)			
	Never Married/Single	3 (11.5%)	1 (3.8%)			
	No Answer	1 (3.9%)	0 (0.0%)			
<b>No. of Children</b>	None	5 (19.3%)	2 (7.7%)	6.2	4	0.184
	One	3 (11.5%)	3 (11.5%)			
	Two	9 (34.6%)	18 (69.2%)			
	Three	6 (23.1%)	3 (11.5%)			
	More than three	1 (3.8%)	0 (0%)			
	No Answer	2 (7.7%)	0 (0%)			
<b>Family History of BC</b>	Yes	6 (23.1%)	6 (23.1%)	0.0	1	1.000
	No	20 (76.9%)	20 (76.9%)			
<b>Previous Mammography Experience</b>	First – time	15 (57.7%)	13 (50%)	0.2	1	0.734
	More-experienced	11 (42.3%)	11 (42.3%)			
	No Answer	0 (0.0%)	2 (7.7%)			

**6.5.3.1. Comparison between Women who Attended Mammography in Scotland and in Greece in Knowledge, Health Beliefs and Health – Related Personality (Stratified Sample of women who attended in Scotland and Greece, n = 52)**

The two groups were compared for differences by use of one– way ANOVA. Significant differences were found in knowledge about mammograms, knowledge about breast cancer risk factors, perceived pain / discomfort from a mammogram, worry about the amount of radiation form a mammogram, fear that a mammogram may lead to unnecessary breast surgery, acceptance, seeking emotional support, denial and hypervigilance (see Table 6.11.).

**Table 6.11. Mean Differences between Mammography Attenders in Scotland and Greece in terms of Knowledge, Health Beliefs and Health-Related Personality\***

VARIABLES OF COMPARISON	Attenders in Scotland		Attenders in Greece		F	df	p
	Mean	(SD)	Mean	(SD)			
<b>KNOWLEDGE VARIABLES</b>							
Tot. Knowledge about BC	2.5	(1.1)	2.3	(0.8)			
Tot. Knowledge about mammogram	3.1	(0.8)	2.5	(0.7)	7.1	50	0.010
No. of BC risk factors recognised	1.5	(0.8)	1.0	(0.8)	4.9	50	0.032
<b>HEALTH BELIEFS</b>							
Barriers	8.7	(2.2)	9.1	(1.5)			
Health Value	19.0	(3.9)	21.0	(3.3)			
Transportation problems	1.2	(0.7)	1.5	(0.9)			
Pain/discomfort	2.2	(1.0)	1.3	(0.6)	12.9	50	0.001
Radiation worry	1.4	(0.6)	2.2	(0.9)	14.7	49	0.0005
Embarrassment	1.2	(0.5)	1.1	(0.3)			
Time off work/domestic	1.3	(0.7)	1.2	(0.4)			
Fear of unneeded surgery	1.3	(0.6)	1.8	(0.7)	6.9	50	0.011
<b>HEALTH-RELATED PERSONALITY</b>							
<b>COPING STYLES</b>							
Active Coping	6.5	(1.4)	6.9	(1.2)			
Acceptance	4.9	(1.9)	6.3	(1.5)	6.7	44	0.010
Seeking Emotional Support	4.7	(1.7)	5.7	(1.4)	5.3	48	0.026
Focusing/venting on Emotions	5.3	(1.1)	5.5	(1.4)			
Denial	3.6	(1.7)	5.0	(1.2)	10.6	48	0.002
Alcohol/drug Use	2.8	(1.7)	2.3	(0.9)			
<b>DECISION-MAKING STYLES</b>							
Vigilance	8.7	(0.4)	9.9	(1.8)			
Hypervigilance	5.8	(2.2)	7.5	(1.8)	8.8	48	0.005
Buck-passing	4.6	(2.2)	4.7	(1.6)			
Procrastination	5.0	(2.2)	6.2	(2.1)			

\* NOTE: Only significant results are presented

## 6.6. Discussion

A number of conclusions could be drawn from the present research, which are discussed under the light of previous research.

### 6.6.1. Perceived Barriers towards Screening Mammography

The main worry about mammography in both attenders and non - attenders was found to be pain / discomfort. Most previous USA - research focused on the negative effect of practical difficulties on screening uptake (e.g. Lerman et al., 1990; Crane et al., 1996). On the contrary, the present research indicated that psychological / emotional rather than practical / logistic barriers are more prevalent in non - attenders. This finding corroborates previous UK - based research (Kee et al., 1992).

Non-attenders were also asked an additional question about their reasons for non-attendance (non-standard barriers). Some stated that they usually avoid screening, while some others admitted that they had missed an appointment but did not follow the issue up nor phoned for another appointment. Those findings are compatible with general evidence that avoidance and repression prevent awareness of unpleasant experiences (Davis & Schwartz, 1987; Weinberger, 1990).

Some non-attenders attributed their non-attendance to having not received an invitation, although some of them admitted that they might have received one but forgot about it. This is similar with a finding by Rojas and colleagues (1996), where non-compliers were more likely than the compliers to state that they had not been told that they should have the examination repeated. "Forgetfulness" has been attributed by previous research to a predisposition by some women to non-compliance, regardless of cost barriers. Similarly to the present research, non-attenders have also been shown as less likely to read any materials distributed by the health authorities and thus more prone to mixing up appointment times (Rimer et al., 1988).

#### **6.6.2. Knowledge about Breast Cancer and Mammography**

A number of similar knowledge deficiencies have been identified both in attenders and non-attenders. The only factor recognised both by attenders (89%) and non-attenders (86%), as predisposing to developing the disease, was "having a family history". Taking into account that 86.1% of non-attenders did not have any family history of breast cancer at the time of assessment, this may be a way of rationalising their non-attendance. Unlike previous research (Routledge et al., 1988; Horton et al., 1996; Champion & Miller, 1996), similar deficiencies were found in the present

research both in women who attend and women who do not attend for breast screening.

However, the deficiencies in fact-based knowledge about breast cancer, identified in the present study, did not coincide with the educational level of the participants. A large proportion of both attenders and non-attenders were highly educated and would be expected to have more access to information. This paradox could be explained, if previous findings are taken into account. Nevertheless, being of high educational level may not necessarily free women from common worries and emotional inhibitions in relation to mammography screening and breast cancer itself (Leathar & Roberts, 1985; Sutton et al., 1994).

The higher level of knowledge about mammography effectiveness found in attenders could be due to information extensively provided by the leaflets accompanying the screening invitation (i.e. "NHS - Breast Screening Programme", "Breast Screening in Scotland", "Invitation for Breast Screening", "After your Breast Screening Visit: What now?" and "65 or over"). These leaflets were used in the present research for the construction of related knowledge questions regarding effectiveness of mammography. In addition, attenders might have read this material more carefully than non-attenders. According to previous research non-attenders are less likely to read any materials distributed by the health authorities (Rimer et al., 1988) and that could explain the poorer knowledge found in the non-attenders about mammography, in the present study.

### **6.6.3. Predicting Screening Mammography Attendance in Scotland**

After controlling for age and education, attenders and non-attenders were found to differ significantly only in their knowledge levels and in health – related coping. Attenders were more knowledgeable about breast cancer and mammography and

focused more on emotions, in order to cope with health stresses than non-attenders. These variables accounted for a large proportion of the variance in attendance (82%) and presented the highest predictive accuracy for membership of the non-attender group (92.3 % of non-attenders correctly classified). Knowledge about mammography was, however, the most powerful single predictor.

Unlike previous studies (Horton et al., 1996), the present research found a positive relationship between breast screening non-attendance and lack of knowledge. In addition, emotional-focused coping was positively associated with attendance in the present study, unlike previous findings. It has been shown that breast screening can evoke negative emotions (Maclean et al., 1984; Dean et al., 1986; Marteau, 1989; Elkind & Eardley, 1990). Also, women, who successfully express those feelings, might be able to face their concerns and become more likely to attend screening. Such results might be useful for health professionals. In order to encourage attendance, health professionals could identify those who have difficulties coping emotionally and provide them with emotion – focused and not just procedure – focused information, (Evans & Clarke, 1983; Freimuth, 1987; Johnson & Meischke, 1993).

According to present results, screening mammography attendance was not associated with the decision-making style a woman uses to decide about health issues. Although previous research in cervical screening has also failed to find such a relationship (White et al., 1994), failure of the present research to establish an association between attendance and decision – making could be attributed to its cross-sectional design.

Among the limitations of the present research are small sample sizes and low (under 50%) response rates. It could also be suggested that this is not a “true”, large-scale prediction, as the study is case-control and not prospective. Therefore, results should be taken with caution. Additionally, the present sample of non-attenders was drawn

from a small geographic area in Central Scotland. This is considered of high socio-economic status area, and for this reason it is likely that the sample is representative of breast screening non-attenders in Scotland. The stratification procedure used has in fact resulted in discarding 90% approximately of our basic attenders' sample (n = 283). However, this procedure was deemed necessary, in order to control for age and education. Controlling for these variables (age and education) was an important methodological decision for the scope of present study, because screening attendance has been associated with both these factors in previous research (e.g. Crane et al., 1996; Champion & Miller, 1996). Furthermore, one of the weaknesses of relevant previous research has been failure to control for these two factors in a single study (e.g. Kee et al., 1992). Nevertheless, both samples of attenders and non-attenders were drawn from the same geographical area and within the same year. This might have increased comparability and decreased the likelihood of geographical and time bias in the sampling procedure.

Another limitation of the present research is the different method as well as the procedure followed to obtain part of the information from attenders and non-attenders. In non-attenders, demographic and health history information were obtained from medical files and were not self-reported as in attenders. Also, non-attenders were sent postal questionnaires from their GP and had not face-to-face contact with the researchers, as the attenders, who were directly approached. Due to the above limitations, the results of the present study are only indicative and not conclusive. Further research is needed to investigate in depth predictors of attendance, using larger and more representative samples, uncontaminated by methodological irregularities.

#### **6.6.4. Cultural Influences: Differences between Mammography Attenders in A Country With and A Country Without a Screening Programme**

In the present research, British attenders appeared to have more knowledge about risk factors related to breast cancer and about mammograms. British participants perceived significantly more pain/discomfort associated with the procedure than the Greek. The latter, on the other hand, appeared significantly more worried about the radiation from a mammogram and more worried that a mammogram may lead to unnecessary breast operation. Moreover, Greek attenders appeared to have used acceptance and denial more than the British and also to have sought emotional support more than the British to cope with health-related stressors. Greek participants were also more hypervigilant with health-related decisions. It is worth mentioning that Greek attenders scored higher than the British in both “positive” and “negative” health coping styles.

Differences in knowledge between the two cultural groups could be explained by the following. Firstly, it has been suggested that the existence of a National Breast Screening Programme is associated with an increased awareness, risk perception and motivation to acquire more information (Maclean et al., 1984; Dean et al., 1986; Elkind & Eardley, 1990). Secondly, breast cancer incidence and mortality are much higher in Britain than in Greece. This increased objective risk might be able to explain the higher risk knowledge that British participants exhibited. Pain and/or discomfort related with the procedure seemed to be more important for British participants, despite systematic efforts to alleviate pain-related worries (specialised leaflets) and provide more comfort and privacy (private changing cubicles, female radiographers) (The Scottish Breast Screening Programme Report 1996, Edinburgh 1997; USERS' VIEWS: A Report of the Second Survey of Women's Views of the Scottish Breast Screening Programme 1993, 1995).



In fact Greek attenders were found to use emotional support as a coping style more than the British. This could be due to cultural differences. Greeks are expected to be generally more extrovert and consequently more sociable than the British, because the Greek culture is classified as more collectivistic, and British as more individualistic (Cameron et al., 1983). Thus, it appears that coping and decision-making styles are influenced from and shaped within a certain cultural context and a particular health belief and health - care system. High use of “emotion-focused” styles, i.e. denial and hypervigilance, found in Greek attenders as ways to cope with and decide about health stresses, could be attributed to feelings of lack of control (Zeidner, 1994). British attenders may feel more in control, because of the existence of a structured mass screening programme. The situation is quite different for Greek attenders, who very often have to initiate the procedure themselves (requesting the test), make arrangements (appointment) and deal with worries at the same time.

Nevertheless, “maladjustive” coping strategies can prove beneficial in dealing with stressors in the short-term for the Greek. Denial could prove useful for a Greek attender to cope with the adverse sides of the procedure and the uncertainty of the mammographic system. Previous research has pointed out that repressors (e.g. avoidance, denial) prevent awareness of unpleasant health – related experiences and women who use them tend to report less breast cancer susceptibility and severity (Davis & Schwattz, 1987; Weinberger, 1990). Because of lack of studies comparing mammography – related attitudes and beliefs in countries with and countries without national programmes, the present findings cannot be compared and contrasted with findings of previous research.

However, one of the limitations of the present research is its cross – sectional design. Assessment of the participants’ attitudes, beliefs and mammography attendance has

not been assessed longitudinally. As a consequence, we are not in the position to know how these change over time. In addition, although data about past experience of mammography and past attendance were collected in the present research, no data on frequency of consequent (post - assessment) mammography attendance were available. Even the information about past attendance is self - reported and, as such, subject to criticism about its accuracy. Future research may need to focus on cross - cultural designs, using longitudinal designs, larger sample sizes and more reliable methods for data collection.

**Chapter 7: Adjustment to Breast Surgery for Breast Cancer of Women in  
Scotland and Greece: A Preliminary Study on the Role of Health Beliefs and  
Coping – with - Illness Information - Styles**

**Abstract**

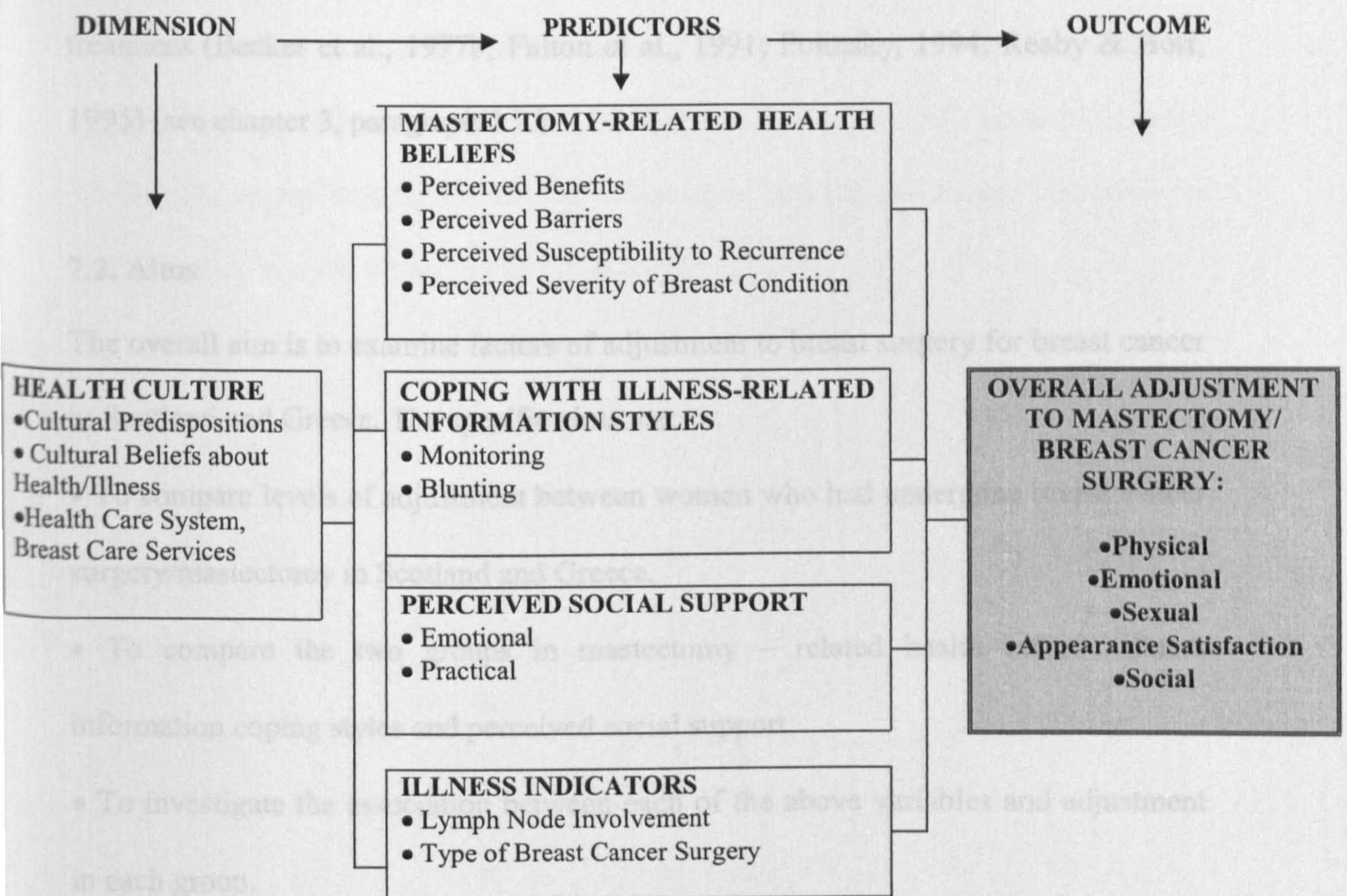
**Aims.** The present study aimed to compare levels of adjustment to breast cancer surgery in Scotland and Greece. The association between adjustment and mastectomy – related health beliefs, coping – with – illness – information styles (monitoring versus blunting) and perceived social support were also examined. **Participants.** The sample consisted of 19 British and 27 Greek women who had undergone breast surgery for breast cancer / mastectomy. All participants had been discharged from hospital and were being followed – up post-operatively on an outpatient basis. Participants were assessed at a mean time of 23.6 months post-operatively. **Measures.** A questionnaire was completed by participants in the hospital at follow-up appointments. The questionnaire included the Mastectomy Health Belief Questionnaire, the Overall Adjustment to Mastectomy Scale and a shortened version of the Miller Behavioral Style Scale (MBSS), known as the Monitor-Blunter Scale. Data on demographics and health history were collected from medical files by a member of the medical team. **Findings.** British and Greek patients did not differ significantly either in their adjustment to their breast surgery overall or domain-specific, i.e. physical, appearance satisfaction, social and emotional adjustment. However, Greek patients scored significantly less on sexual adjustment than the British. It was also found that perceived social support was negatively associated with emotional adjustment in the Greek patients, while medical factors (i.e. lymph node involvement and type of breast cancer surgery) were not found to bear any association with adjustment in any of the two groups. **Conclusions.** Present findings provided

preliminary information on the importance of health beliefs and coping style for threatening information for the adjustment patients with breast cancer. Adjustment to breast cancer surgery also appears as culture-specific, since different factors are associated with adjustment across the two cultural groups.

## 7.1. Theoretical Background: An Overall Adjustment to Breast Cancer Surgery / Mastectomy Model

Previous research on factors associated with adjustment to breast cancer diagnosis and treatment(s) were presented in chapter 3. There has been previous evidence that the variables included in the present research are associated both with adjustment and with each other (e.g. Maguire, 1978; Metze, 1978; Kreitler et al., 1997; Davison et al., 2000) (see Figure 7.1).

**Figure 7.1. The Overall Adjustment to Mastectomy Model**



The Overall Adjustment to Breast Cancer Surgery / Mastectomy Model, formulated for the present study, is organised around three basic innovative dimensions:

Dimension One: The Multi-Dimensional Character of Adjustment. Adjustment is examined as a multi-dimensional variable, which includes not only psychological /

emotional but also physical and social components (Scott and Eisendrath, 1985/1986; Glanz and Lerman, 1992) (see chapter 3, paragraphs 3.6. and 3.7.).

**Dimension 2: The Cultural Dimension of Adjustment.** In the present study cross – cultural comparisons are made between women who had undergone breast surgery for breast cancer in Scotland and Greece (Baider & Kaplan De-Nour, 1986) (see chapter 3, paragraph 3.7. and chapter 4, paragraph 4.3.).

**Dimension 3: The Introduction of Mastectomy-Related Health Beliefs as an adjustment factor.** The applicability of health belief constructs has been examined in the present study in relation to adjustment after a breast cancer diagnosis and treatment (Becker et al., 1977b; Fulton et al., 1991; Polinsky, 1994; Reaby & Hort, 1995) (see chapter 3, paragraph 3.7.).

## **7.2. Aims**

The overall aim is to examine factors of adjustment to breast surgery for breast cancer in Scotland and Greece. The specific aims are:

- To compare levels of adjustment between women who had undergone breast cancer surgery/mastectomy in Scotland and Greece.
- To compare the two groups in mastectomy – related health beliefs, illness information coping styles and perceived social support.
- To investigate the association between each of the above variables and adjustment in each group.

### **7.3. Method**

#### **7.3.1. Participants**

Out of a total of 46 women, who had undergone breast surgery for breast cancer (lumpectomy / wide local excision, mastectomy with or without axillary sampling / cleaning or modified radical mastectomy), 41.3% (n = 19) were British and 57.8% (n = 27) Greek. All participants had been discharged and were being followed up post-operatively on an out - patient basis. Participants of the total sample were assessed at a mean time of 23.6 months post - surgery (SD = 20.5, range 3-96 months). Mean age for total sample of patients was 54.5 (SD = 11.4, median 55.0, mode 55.0, range 22-75). Mean age for the British was 56.6 (SD = 11.4, median 56.6, mode 56.0, range 30-75) and mean age for the Greek was 53.0 (SD = 3.2, median 55.0, mode 55.0, range 22-70). Demographics, health history, information seeking and illness indicators by cultural group are shown on Tables 7.1 and 7.2.

**Table 7.1. Demographics and Health History by Ethnic Group \***

DEMOGRAPHICS	CATEGORIES		Total n = 46	Patients in Scotland n = 19	Patients in Greece n = 27	$\chi^2$	df	p
	Class 1 (Professionals)	Class 2 (Intermediate/Skilled)						
Occupational Status	Class 1 (Professionals)		3	2	1	0.9	2	0.637
	Class 2 (Intermediate/Skilled)		3	1	2			
	Class 3 (Partly/unskilled, inactive)		40	16	24			
Marital Status	Married/Cohabiting		35	15	20	0.3	3	0.954
	Divorced/Separated		2	1	1			
	Widowed		6	2	4			
	Never married/Single		3	1	2			
<b>HEALTH HISTORY INDICATORS</b>								
Family History of Breast Cancer	Yes		12	3	9	1.8	1	0.182
	No		34	16	18			
Suffering from Other Chronic Conditions	Yes		21	4	17	7.9	1	0.005
	No		25	15	10			
Prescription of Psycho-tropic Medication	Before Diagnosis		3	1	2	0.2	1	0.686
	After Diagnosis		10	3	7	0.7	1	0.385
	Never		33	15	18			
Type of Psycho-tropic Medication	Anxiolytic		5	0	5			
	Antidepressant		8	4	4			
	Non applicable		33	15	18			
Professional (Non-Medical) Support	Yes		23	9	14	0.1	1	0.765
	No		23	10	13			
<b>INFORMATION - SEEKING</b>								
Information from Doctor/Nurse	Yes		43	16	27	2.8	1	0.093
	No		3	3	0			
Information from Family/Friends	Yes		7	3	4	0.1	1	0.705
	No		39	16	23			
Information from Medical Books	Yes		19	7	12	1.3	1	0.251
	No		27	12	15			
Information from Magazines/Newspapers	Yes		7	5	2	1.3	1	0.257
	No		39	14	25			
Information from TV Programmes	Yes		13	2	11	6.2	1	0.013
	No		33	17	16			
Information from People with similar problems	Yes		25	10	15	1.0	1	0.317
	No		21	9	12			

\* NOTE: Only frequencies are presented



**Table 7.2. Illness Indicators by Ethnic Group \***

ILLNESS INDICATORS		Total n = 46	Patients in Scotland n = 19	Patients in Greece n = 27	$\chi^2$	df	p
<b>Type of Breast Surgery</b>	Lumpectomy / Wide Local Excision	12	5	7	12.2	1	0.002
	Mastectomy	22	14	8			
	Modified Radical Mastectomy	11	0	11			
<b>Lymph Node Involvement</b>	Yes	29	10	19	1.5	1	0.220
	No	17	9	8			
<b>Affected Breasts</b>	Unilateral	46	19	27			
	Bilateral	0	0	0			
<b>Recurrence</b>	Yes	3	0	3	2.2	1	0.133
	No	43	19	24			
<b>Metastasis</b>	Yes	10	0	9	5.2	1	0.023
	No	36	19	18			
<b>Chemotherapy</b>	Never	16	8	8	0.8	1	0.382
	In the past	30	11	19			
	Currently	0	0	0			
<b>Radiotherapy</b>	Never	25	6	19	6.8	1	0.009
	In the past	21	13	8			
	Currently	0	0	0			
<b>Endocrine Therapy</b>	Never	16	4	12	4.2	1	0.041
	In the past	20	6	14			
	Currently	10	9	1			
<b>Way Breast Problem was discovered</b>	By yourself	40	14	26			
	By partner	1	0	1			
	By screening mammography	4	4	0			
	By doctor's examination	1	1	0			
<b>Reconstruction</b>	Yes	1	0	1	0.8	1	0.396
	No	45	19	26			

\* NOTE: Only frequencies are presented

### 7.3.2. Procedure

Participants were patients at the Breast Clinic, Stirling Royal Infirmary in Central Scotland, and at the Unit of Breast Pathology and Surgery of the Gynaecology Department, University Hospital of Ioannina in Greece. Assessment was made by use of a short (4½ - paged) questionnaire. Completion of the questionnaire took approximately 5 to 10 minutes for both groups. The questionnaire was administered to the British participants by the breast care nurse and to the Greek participants by either the consultant / director or the midwife/maiden of clinic / department. In both cases, completion took place at the hospital in the presence of the breast care nurse / consultant / maiden, at follow-up appointments. Timing of completion of the questionnaire within the appointment was left to the clinical judgement of the medical practitioners, who administered it. Following a brief explanation of the scope and

aims of the study by the medical practitioner, patients who agreed to participate were asked to complete the questionnaire and return it to the practitioner. The practitioners responsible for the administration of the questionnaire were provided with all necessary (verbal and written) information about the completion of the questionnaire by the researchers (see Appendix XIII). Hence, they were able to assist participants, if needed. The questionnaire was also accompanied with an information letter (see Appendices X and XIV), describing briefly the aims of the study and emphasising its voluntary, anonymous and confidential character.

Medical practitioners were chosen as the most suitable to give out the questionnaire for the following reasons: (a) they work closely with the patients and they are expected to be more familiar and comfortable with them and (b) the hospital environment may have been stressful for the patients, therefore, it was deemed appropriate for patients to be approached by familiar to them health providers.

Data on demographics, physical and mental health history were collected from the medical files by the medical practitioner, using a Patient Demographics Record Sheet. This data were anonymised before made available to the researchers.

### **7.3.3. Materials**

Participants completed a 4-part questionnaire (see Appendices XI and XII), consisting of the following measures:

- A 14-item Mastectomy Health Belief Questionnaire, devised for the needs of the present thesis. The questionnaire was used to measure the following constructs: Perceived Susceptibility to Breast Cancer Recurrence (three items, e.g. “I think about recurrence”), Severity of Personal Breast Problem (two items, e.g. “I believe that my breast problem can be cured easily”), Perceived Benefits of Mastectomy (three items,

e.g. “I think that the breast surgery was necessary, because it has saved my life”), Perceived Barriers to Mastectomy (three items, e.g. “After breast surgery, I am unable to participate in the same activities I engaged before surgery”) and Health Motivation after Mastectomy (three items, e.g. “After breast surgery I eat a well-balanced diet”). Participants responded in a 4-point Likert - type answer scale, ranging from “Strongly Disagree” to “Strongly Agree”. The Perceived Severity and Health Motivation sub-scales is part of the Health Belief Questionnaire (see Materials in chapter 5) but have been linguistically amended for the needs of the present study. The rest of the sub-scales have been based on standardised breast cancer – specific questionnaires (i.e. Fulton et al., 1991; Polinsky, 1994; Reaby & Hort, 1995). Cronbach’s alpha for the global score of the scale for the present study was 0.59 and for the sub-scales ranged from 0.53 to 0.78. Intercorrelations between sub-scales were low to moderate, ranging from 0.328 ( $p = 0.030$ ) to 0.442 ( $p = 0.004$ ). Moderate to low reliability coefficients may be due to the small number of items per sub-scale and small sample size.

- A 20-item Overall Adjustment to Mastectomy Scale, consisting of the following 5 sub-scales: Physical Adjustment (e.g. “To what extent have you been affected by the following physical symptoms since your breast surgery? Swelling of the arm, including hands and fingers”), Sexual Adjustment (e.g. “After my breast surgery I do not feel like embracing, kissing, or caressing my partner as much as I did before”), Appearance Satisfaction (e.g. “After having a breast surgery, it has been embarrassing for me to shop for clothes”), Social Adjustment (e.g. “I now prefer not to participate in certain social activities, e.g. going out with friends, going to parties etc.”) and Emotional Adjustment (e.g. “Following my breast surgery, I feel sorry for myself”). Each sub-scale consisted of 4 items in a 4-point Likert – type answer scale, ranging from Strongly Agree to Strongly Disagree. The Scale provides separate scores for the

individual sub-scales and an overall score. Construction of the scale has been based on previously used breast cancer – specific measures (i.e. Wellisch & Schain, 1985; Ganz et al., 1990; Polinsky, 1994; Reaby & Hort, 1995). These were modified in language and format to accommodate the needs of the present study. In the present study the Cronbach's alpha reliability coefficient for the global score was 0.75 and for the sub-scales ranged from 0.41 to 0.67. Low reliability coefficients may be attributed to the small number of items per sub-scale and the small sample size. Nevertheless, intercorrelations between sub-scales were moderate to high, ranging from 0.323 ( $p = 0.040$ ) to 0.793 ( $p = 0.0005$ ), indicating an equally moderate to high internal consistency.

- A shortened version (senarios 1 and 4) of the Miller Behavioral Style Scale (MBSS) or Monitor – Blunter Style Scale (Miller, 1987) has also been used. The scale measures two styles of coping with health – related information, monitoring and blunting. Participants were presented with two senarios of imaginative stressful situations (e.g. “Vividly imagine that you are afraid of the dentist and have to get some dental work done.”) and were asked to choose from a list which actions they would take in those situations (e.g. “I would ask the dentist exactly what he/she was going to do” or “I would like to think about pleasant memories”). The MBSS scale has been used in a variety of cancer-related settings with populations such as gynaecologic patients with pre-cancerous cervical disease (Miller et al., 1994), women at familiar risk for breast and ovarian cancer (Wardle et al., 1993; Lerman et al., 1994), patients with cancer (Lerman et al., 1990; Steptoe et al., 1991; Lerman et al., 1993), and healthy women undertaking self – screening cancer regimens, e.g. breast self - examination (Jacob et al., 1992; Miller et al., 1996). It has also been used in a number of other threatening medical contexts and populations, relevant to cancer

- related issues and quality of life (Ganz, 1990; Schag et al., 1991; Ganz et al., 1991). The original scale has been reported by previous studies to have adequate test / re-test reliability (in the 0.70 to 0.80 range), whereas scores on the scale have been reported to be generally unrelated to age, education, race, or medical background variables (Miller et al., 1988; Ludwick - Rosenthal & Neufeld, 1993; Miller et al., 1994; Miller, 1995). In the present study Cronbach's alpha for the global scale was 0.70, for the "blunter" sub-scale 0.63 and for the "monitor" 0.60. Moderate reliability coefficients of individual sub-scales reported in the present study might be due to the small sample size. Nevertheless, the two sub-scales were moderately correlated ( $r = 0.405$ ,  $p = 0.006$ ), indicating moderate internal consistency.

- In the last part of the questionnaire participants were asked two multiple choice questions about help seeking (i.e. "Did you seek professional non medical help, in order to cope better with your breast problem?"). The first question was about seeking professional (non-medical) help ("From whom did you seek such help? Psychiatrist, Clinical Psychologist, Counsellor/Psychotherapist, Social worker, Nurse, Member of clergy, Non-professional support group). Participants could tick as many of the above options applied to them. In the second question participants were asked to rate in a 4-point scale the extent to which professional help was helpful to them for each of the sources selected in the previous question (i.e. "Please rate the extent to which this professional help was helpful to you", Not at all, A little, Moderately, A lot). These two questions were derived from the Questionnaire for Patients Who Have Undergone Breast Surgery (Wellisch & Schain, 1985) and have been modified in language and format accordingly to meet the needs of the present study.

Participants were also asked to rate separately in a 4-point answer scale, ranging from "Not at all" to "A lot", both the emotional and practical support they had received

from each of the following sources, i.e. their partner/spouse, their children, health professionals, family / friends and co-workers. This question is also a modified - in language and format - version of a similar question used in Wellisch and Schain (1985). It produces a total score for perceived emotional (range 0-15) and a total score for perceived practical support (range 0-15).

Participants were additionally asked about other current problems (i.e. “Are there any issues in your life, other than the health – related ones, that particularly concern you at present?” Yes, No/ If Yes, please specify). This question is a linguistically modified version of the one used in Ganz et al. (1990).

A multiple - choice question about information – seeking (i.e. “Where did you get most of your information about your breast problem and its treatment? Doctor/nurse, Family/friends, Medical books, Magazines/newspapers, TV programmes, People with similar problems”) was also included. This question was derived from Wellisch and Schain (1985) after slight modification to account for the objectives of the present study.

Finally participants were asked about the way their problem was discovered, using a multiple - choice question (i.e. “How was your breast problem discovered? By yourself, By your partner, By screening mammography, By doctor’s examination, Other”). This question was also derived from Wellisch and Schain (1985).

- In the Patient Demographic Records Sheet information on basic demographics, health history and illness indicators were recorded (see Table 7.2.). The questions about suffering from other chronic conditions and metastasis were derived from Ganz et al. (1990). The questions about type of treatment received/being received and recurrence were derived from Polinsky (1994). The questions assessing lymph

involvement, reconstruction and psychotropic medication came from Wellisch and Schain (1985).

## 7.4. Results

### 7.4.1. Differences between Breast Cancer Patients in Scotland and Greece regarding Adjustment, Health Beliefs, Health – Information Coping Styles and Perceived Social Support

The two groups were compared in adjustment and factors of adjustment by using one – way ANOVA. Significant differences were found in sexual adjustment, perceived susceptibility to recurrence and perceived benefits to mastectomy, blunting and perceived emotional support (see Table 7.3).

**Table 7.3. Mean Differences in Adjustment and Associated Factors between Patients in Scotland and Greece**

BY VARIABLE	Patients in Scotland Mean (SD)	Patients in Greece Mean (SD)	F	df	p
<b>GENERAL</b>					
Age	56.6 (11.4)	53.0 (3.2)	1.1	1	0.300
Time elapsed since surgery	26.1 (24.9)	21.9 (17.1)	0.5	1	0.493
<b>ADJUSTMENT</b>					
Overall Adjustment	63.9 (11.1)	59.3 (5.7)			
Physical Adjustment	11.2 (3.2)	11.5 (1.8)			
Sexual Adjustment	13.2 (2.7)	10.9 (2.7)	5.7	1	0.022
Appearance Satisfaction	11.7 (2.7)	12.2 (2.6)			
Social Adjustment	13.4 (3.2)	12.0 (2.6)			
Emotional Adjustment	12.7 (3.3)	12.1 (2.0)			
<b>HEALTH BELIEFS</b>					
Perceived Susceptibility to recurrence	8.4 (2.7)	11.0 (1.2)	19.3	1	0.0005
Perceived Severity of personal breast problem	4.9 (1.6)	5.6 (1.2)			
Perceived Benefits of mastectomy	9.5 (1.7)	7.4 (1.3)	22.4	1	0.0005
Perceived Barriers towards mastectomy	6.3 (2.2)	7.1 (1.6)			
Health Motivation	8.5 (2.4)	8.0 (1.2)			
<b>HEALTH –INFORMATION COPING STYLES</b>					
Monitoring	4.2 (1.4)	5.2 (1.9)			
Blunting	1.9 (1.3)	3.3 (1.8)	8.4	1	0.006
<b>PERCEIVED SOCIAL SUPPORT</b>					
Social Support (total)	19.4 (6.6)	20.0 (2.8)			
Emotional Social Support	10.4 (3.3)	12.9 (1.0)	5.4	1	0.031
Practical Social Support	5.9 (4.2)	7.1 (2.4)			

#### **7.4.2. Factors of Adjustment of Breast Cancer Patients in Scotland and Greece**

One – way ANOVA was used to examine factors associated with adjustment (overall and domain-specific) for each group separately. The variables measuring overall and domain-specific adjustment were divided into 1 = adjustment above the mean and 0 = adjustment below the mean, using the mean adjustment scores as a cut – off point. This procedure enabled a clear and precise interpretation of the results. The mean was used as a cut-off point, because the range of adjustment scores (minimum-maximum score) in both groups was too small.

In the British group, overall adjustment to breast surgery was significantly associated with perceived barriers to breast surgery. Below average adjusted participants perceived more drawbacks to their breast surgery than those above average.

Physical adjustment was significantly associated with monitoring and perceived barriers to breast surgery. Below average adjusted participants scored higher in both factors. Similarly, sexual adjustment was significantly associated with perceived barriers to breast surgery. Satisfaction with appearance was significantly associated with perceived susceptibility to recurrence. Below average adjusted participants felt more susceptible to recurrence than the above average ones. Social adjustment was significantly associated with perceived susceptibility to recurrence and perceived barriers to breast surgery. Below average adjusted participants scored higher in both factors. Emotional adjustment in this group was not associated with any of the factors examined in the present study (see Table 7.4.).



**Table 7.4. Factors Significantly associated with Adjustment of Patients in Scotland\***

<b>ADJUSTMENT TO BREAST SURGERY (MASTECTOMY)</b>				
<b>OVERALL ADJUSTMENT</b>	<b>F</b>	<b>df</b>	<b>p</b>	<b>Mean Comparisons</b>
Perceived Barriers to Mastectomy	6.1	1	0.035	BA>AA
<b>PHYSICAL ADJUSTMENT</b>				
Monitoring	4.7	1	0.045	BA>AA
Perceived Barriers to Mastectomy	5.6	1	0.035	BA>AA
<b>SEXUAL ADJUSTMENT</b>				
Perceived Barriers to Mastectomy	6.5	1	0.031	BA>AA
<b>APPEARANCE SATISFACTION</b>				
Perceived Susceptibility to recurrence	15.2	1	0.002	BA>AA
<b>SOCIAL ADJUSTMENT</b>				
Perceived Susceptibility to recurrence	5.6	1	0.036	BA>AA
Perceived Barriers to Mastectomy	26.1	1	0.001	BA>AA

[Key: AA = Above Average Adjustment, BA = Below Average Adjustment]

\* NOTE: Only significant results are presented

In the Greek group, overall adjustment and physical adjustment was not associated with any of the factors examined. Sexual adjustment was significantly associated with monitoring. Below average adjusted participants scored higher in this factor. Satisfaction with appearance was associated with perceived susceptibility to recurrence with below average adjusted participants feeling more susceptible. Social adjustment was associated with perceived severity of the breast problem with below average adjusted participants scoring higher in this factor than the above average ones. Emotional adjustment was significantly associated with perceived emotional support with participants of below average adjustment feeling they received more emotional support than the above average adjusted ones (see Table 7.5.).

**Table 7.5. Factors Significantly associated with Adjustment in Patients in Greece\***

<b>ADJUSTMENT TO BREAST SURGERY (MASTECTOMY)</b>				
<b>SEXUAL ADJUSTMENT</b>	<b>F</b>	<b>df</b>	<b>p</b>	<b>Mean Comparisons</b>
Monitoring	4.4	1	0.045	BA>AA
<b>APPEARANCE SATISFACTION</b>				
Perceived Susceptibility to recurrence	7.3	1	0.012	BA>AA
<b>SOCIAL ADJUSTMENT</b>				
Perceived Severity of Breast Problem	4.7	1	0.040	BA>AA
<b>EMOTIONAL ADJUSTMENT</b>				
Perceived Emotional Social Support	6.6	1	0.030	BA>AA

[Key: AA = Above Average Adjustment, BA = Below Average Adjustment]

\* NOTE: Only significant results are presented

## 7.5. Discussion

The main aim of the present study was to compare levels of breast cancer post-surgical adjustment between and within British and Greek women. According to the findings, the two groups did not differ significantly either in their overall or domain-specific adjustment. However, Greek participants were found significantly less adjusted in the sexual domain than the British. The two groups were also found to differ in levels of perceived susceptibility of recurrence, perceived benefits of breast surgery, blunting and perceived emotional social support. Specifically, Greek women felt more susceptible to a recurrence, scored higher in blunting and perceived emotional social support, whereas the British were more likely to have perceived their breast surgery as a necessary and beneficial treatment for their condition.

In the British group, participants who presented with an above average overall adjustment had perceived fewer barriers towards breast surgery. Also, participants who had used less monitoring and perceived more barriers towards their breast surgery presented as more adjusted to the physical complaints post-surgically.

Participants, who perceived themselves as less susceptible to a recurrence, were more satisfied with their appearance after their operation and less concerned with any bodily changes occurred. Participants, who perceived themselves as less susceptible to recurrence and also perceived fewer barriers towards breast surgery, appeared more socially adapted. None of the factors examined in the present study was associated with emotional adjustment in the British group.

In the Greek group, participants who used more monitoring to cope with their breast problem and perceived fewer barriers to surgical treatment were more physically adjusted, whereas participants who perceived fewer barriers to surgical treatment were also more adjusted in the sexual domain. Women in this group who were less concerned with recurrence were more satisfied with their post-surgical body image, while participants who perceived their breast problem as less serious and more treatable appeared more socially adjusted. Also Greek women who felt they had received less emotional support appeared as better socially adjusted. However, overall and physical adjustment was not found to bear an association with any of the variables examined in the present study.

The above results corroborate previous findings that adjustment to breast cancer and breast cancer surgery are domain – specific and that different variables are associated with different domains of adjustment (Kreitler et al., 1992). It also appears that adjustment may be culture – specific, as different factors were found associated with adjustment across cultures. It has also been suggested by previous studies that beliefs about and coping with breast cancer might be culturally dependent (Baider & Kaplan-De Nour, 1988; Wardle et al., 1995) and that breast cancer is very much a socially determined experience (Davidson et al., 2000). Nevertheless, despite the differences detected within cultural groups, it could be concluded that, when certain socio –

demographics and health variables are controlled for, no differences are found in the overall adjustment and the majority of adjustment domains.

Absence of differences in overall adjustment and all the domains, with the exception of the sexual domain, could also be attributed to a number of methodological biases of the present study, i.e. the small sample size. The Overall Adjustment to Mastectomy Scale, used in the present study, was based on previously used, standardised breast cancer – specific measures and in the present study has exhibited relatively good reliability properties. However, further research using larger and more representative samples is needed, in order to establish further its psychometric properties. Also, although the two groups did not differ, in terms of time elapsed since surgery, as the majority of participants were in an advanced post-surgical time point, such was rather large (from 3 months to 8 years). Differences regarding type of surgery, occurrence of metastasis and palliative treatments between groups may have also affected the present results. Therefore, future research is required to establish factors of adjustment uncontaminated by illness and treatment – related bias.

Specific health beliefs were found important for adjustment in the present study, irrespective to ethnic group. Similarly to previous studies (Fallowfield & Clark, 1991; Reaby & Hort, 1995), in the present study patient's beliefs regarding perceived susceptibility of recurrence and perceived barriers to breast surgery were associated with adjustment for both groups. Monitoring was also found negatively associated with certain domains of adjustment. High monitoring was associated with poorer physical adjustment of the British participants and with poorer sexual adjustment of the Greek participants. Previous research has shown that patients who score high in monitoring place more informational demands regarding their condition and treatment and exert intense information – seeking behaviour (Miller, 1995). These

characteristics have been linked with the high levels of anxiety and the worries about the seriousness of their condition that monitors have been reported to present with (Miller, 1995) and, as a consequence, with poorer adjustment to their illness (Lerman et al., 1990).

Unlike previous evidence, medical indicators, as measured by type of breast surgery and lymph node involvement, were not found to be associated with adjustment, overall and domain - specific, across groups. This could be attributed to the small sample, the sample characteristics or the choice of medical indicators. In addition, unlike previous research (Levy et al., 1987; Lippman, 1988; Kreitler et al., 1997), the present study has utilised only basic (i.e. stage of disease and lymph node involvement) but not sophisticated medical information, e.g. oestrogen and progesterone receptors and natural killer cell activity (NK). It has been shown that such information may be associated with adjustment (e.g. Meyerowitz et al., 1983; Knobf, 1986; Royal-Schaker, 1991).

Nevertheless, the present study aimed to provide some preliminary data on the role of health beliefs and monitoring – blunting post-operatively on the overall and domain - specific adjustment of breast cancer patients. According to the results these two factors appeared important. However, future research, more sophisticated methodologically, is required to establish and explore further the above associations. Future research in the area should also be characterised by larger samples, inclusion of detailed data on medical indicators and control for post-surgical assessment time points.

## **Part D – Overall Conclusions and Implications of the Results**

## **Chapter 8: Overall Conclusions and Implications of the Results**

### **8.1. Introduction**

The present chapter aims to summarise key findings of the present research and discuss implications.

### **8.2. Breast Self Examination (BSE) Practice**

Key findings of the present research regarding BSE practice could be summarised as follows:

1. BSE adherence rates differed between older and younger women, whereas practice was predicted by different variables across age groups (see Table 8.1). However, BSE was significantly predicted by knowledge and health beliefs (especially perceived barriers) across age groups but not by demographics, health history and personality.
2. BSE practice was also predicted by different factors in each of the three time intervals (having ever practised, practice in the short-term and in the long-term), confirming our theoretical assumption that BSE is a dynamic and complex behaviour and should not be considered nor assessed as a single uni-dimensional variable (see Table 8.1).
3. BSE practice rates of both younger Scottish and Greek women were found higher than previously reported, although frequency of practice was not different between the two cultural groups. However, the two groups differed significantly in their knowledge and attitudes towards BSE and a number of health – related personality variables.

**Table 8.1. Predictors of BSE Practice across Study Groups, as identified by the present research**

<b>PREDICTORS OF BSE PRACTICE</b>	<b>Younger Women in Scotland</b>	<b>Older Women in Scotland</b>
<b>Having ever practised BSE</b>	Knowledge about BC (+) Perceived Barriers (-) Health Motivation (+) Cues for Action (+)	Perceived Barriers (-) Cues for Action (+)
<b>BSE practice in short-term</b>	No Predictors identified	Knowledge about BSE (+) Perceived Barriers (-)
<b>BSE practice in long-term</b>	No Predictors identified	Knowledge about BSE (+) Perceived Barriers (-)
<b>Summary of Predictors</b>	Knowledge Health Beliefs	Knowledge Health beliefs

(+) Positive association with BSE practice

(-) Negative association with BSE practice

The above findings might have a number of implications for health promotion / policy and clinical practice. Firstly, present findings propose a change of focus as regards teaching and promoting BSE. Instead a commonly supported uni - dimensional and static view of BSE, the present research suggests that BSE should be considered as a multi - factorial behaviour, which develops dynamically over time. As a consequence, introducing / teaching BSE should not be a one-off task. Initial instruction of BSE practice should be accompanied by adequate follow – up of uptake and maintenance of practice. Considering the present findings, such an approach could ensure that women are not only provided with and regularly updated on factual information, but also their needs for emotional support and their concerns regarding BSE and breast cancer are closely monitored and timely addressed.

Secondly, as highlighted by the present research, practice might be subjected to different influences across age groups. Beliefs and attitudes towards BSE as well as actual adherence rates were different between younger and older group. For this, BSE campaigns should take the above differences into consideration, when targeting



different age groups, in order to address specific negative attitudes that might inhibit practice in those groups. Additionally, BSE practice was found higher in older and at higher objective risk of breast cancer than in younger and at lower risk women. These findings support promoting BSE in younger groups, considering the value of BSE for this particular age group (Goldbloom, 1985; Mamon & Zapka, 1986; Rodriguez et al., 1995; Fox et al., 1997).

The present findings have also highlighted the importance of culture as a factor in prioritising BSE practices. Cultural differences in BSE beliefs and health care experiences might be considered in promoting BSE in different countries, as well in different ethnic / cultural groups within the same country. This might be more relevant for multi-cultural societies, like Scotland / UK. It might also hold implications for the implementation of EC health priorities and guidelines, health policy planning and a more effective allocation of resources regarding cancer screening and care within the countries – members.

### **8.3. Screening Mammography Attendance Studies**

Key findings of the present thesis as regards screening mammography attendance, are summarised below:

1. Screening mammography attendance was significantly predicted by knowledge and emotional coping, which together explained the largest amount of attendance variance (82%). However, the best predictor of breast screening attendance was knowledge about mammography.
2. Attenders appeared to have more knowledge about breast cancer, more knowledge about mammography and to focus more on emotions, in order to cope with health stresses than non-attenders.

3. The main perceived barriers towards breast screening attendance both in attenders and non - attenders was pain / discomfort. Perceived barriers of non-attenders were psychological / emotional rather than practical / logistic.

4. Women attending for mammography in Scotland and Greece were significantly different in knowledge, worries about mammography and health-related personality (i.e. decision making and coping styles). These differences are believed to be culturally - related to a certain extent (Cameron et al., 1983).

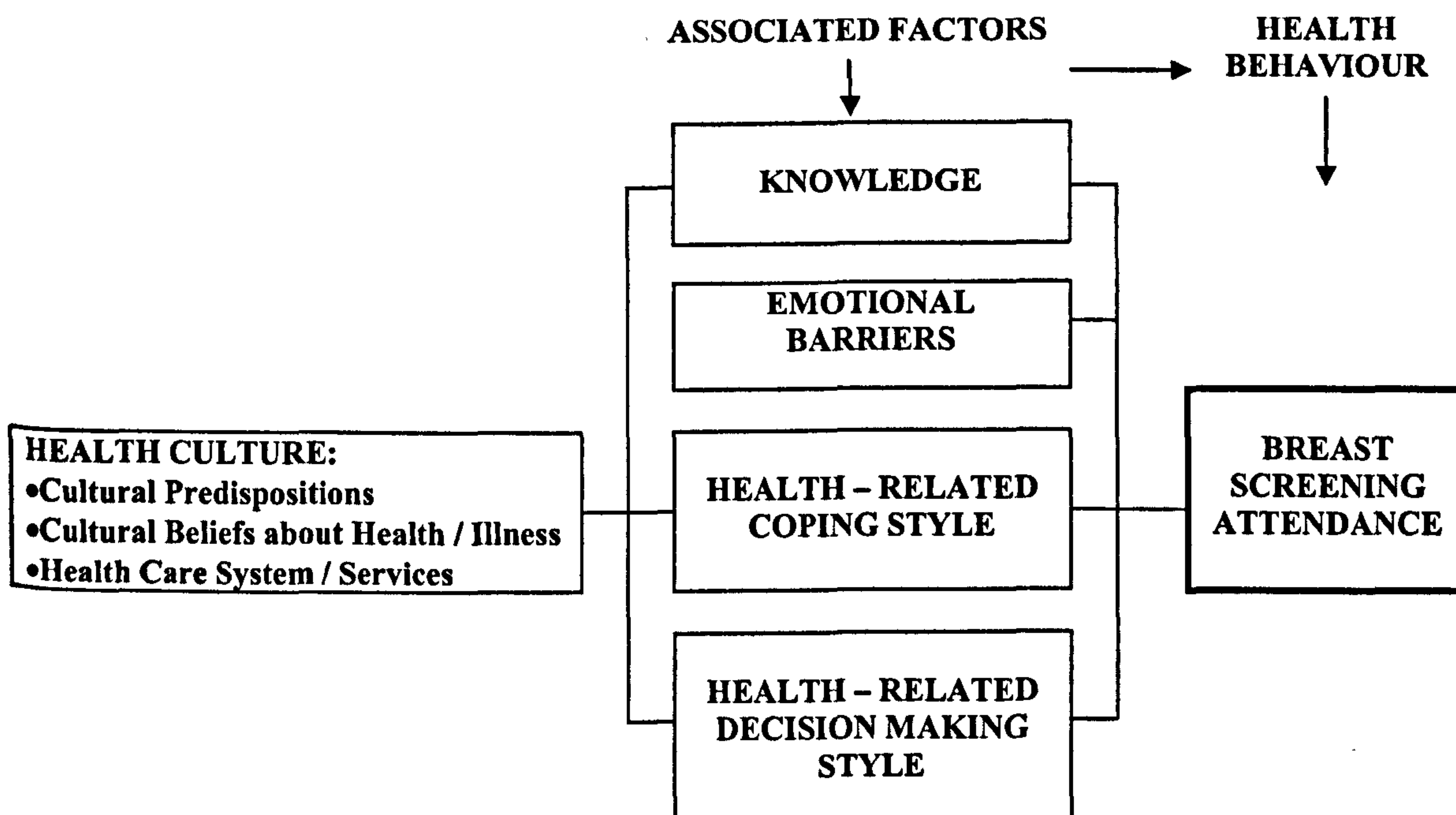
The above findings might have a number of implications for health campaigns, which aim not only to increase screening mammography attendance but also to address breast cancer – related concerns that might inhibit breast care behaviours in general. These findings also highlight the importance of knowledge as a factor of screening attendance. However, according to the present research, attempts to increase awareness and factual knowledge should be accompanied by emotional – related information and support, regarding screening issues and breast cancer. There has actually been evidence that knowledge and coping style are changeable by use of carefully designed training interventions (Franzoi, 1996; Michie et al., 1996). Appropriate interventions could include specific training for health professionals in communication skills and provision of information. In order to address the issue of poor mammography knowledge in women, who do not attend, intervention should focus specifically on this group. Considering that non-attenders are non – responsive to long and complicated information material (Rimer et al., 1988), especially tailored leaflets may be needed to target this group and provide specific information on how to cope with screening - induced worries. Such an initiative could be complemented by alternative methods of providing information, e.g. residential support and information groups.

In addition, current leaflets by the health authorities to target women eligible for screening, focus mainly on information about the procedure of screening mammography itself. Considering the present findings, these leaflets should also include information about breast cancer – related facts.

The present research emphasised the importance of socio-cultural beliefs about health and illness and structural / institutional differences in health – care as a dimension in promoting mammography. In the present thesis we introduced the term “health culture”, which describes those dual influences.

The Multi-Factorial Model for Screening Mammography Attendance used in the present research to examine screening mammography attendance has been modified in light of the above findings (see Figure 8.1.). The modified version is presented below:

**Figure 8.1. Modified version of the Multi-Factorial Model for Screening Mammography Attendance**



#### **8.4. Adjustment to Breast Cancer Surgery / Mastectomy Studies**

Key findings of the present research regarding adjustment to breast cancer surgery / mastectomy are briefly presented below:

1. Adjustment to breast surgery overall or domain-specific, i.e. physical, appearance satisfaction, social and emotional adjustment was not different between British and Greek patients.
2. Greek patients scored significantly less on sexual adjustment than the British. The two groups were also found to differ in perceived susceptibility of recurrence, perceived benefits of breast surgery, blunting and perceived emotional social support. Greek women felt more susceptible to a recurrence, scored higher in blunting and perceived emotional social support, whereas the British were more likely to have perceived breast surgery as a necessary and beneficial treatment for their condition.
3. Health beliefs and coping with threatening information rather than illness indicators (i.e. lymph node involvement and type of breast cancer surgery) were important factors of adjustment in both cultural groups.
4. Different combination of factors was associated with adjustment across the two cultural groups.

The present results may have a number of clinical implications for the post-surgical management of breast cancer patients both in Scotland and Greece. One of the issues emphasised by present findings was the importance of continuity of care for adjustment in the longer term. Continuity of care and regular follow-ups could positively contribute to adjustment and quality of life through timely and effective assessment of both psychological and physical status. Addressing early signs of psychological and physical deterioration of breast cancer patients might not only

prevent clinical mental health problems but also moderate risks from physical side effects of cancer treatment.

According to present findings, concerns about certain aspects of the operation (i.e. how extensive it was, degree of mutilation and its effects on the lifestyle) are not simply an acute post-surgical reaction, but may persist for much longer post surgery. For this, breast care teams may need to keep assessing and addressing the concerns individual patients during her adjustment after de-hospitalisation. Considering that fear of recurrence interfered with appearance satisfaction both in British and Greek patients, addressing these fears might be important for restoring confidence and facilitating coping with post-surgical changes.

The present research has also focused on the style a woman uses to cope with information about her condition as an important factor in post-surgical adjustment. Hence, matching the style of communication and the amount of information provided by the clinician to the coping needs of individual patients should be of serious clinical significance. Previous research has shown that high monitors demand more detailed and voluminous information about their condition (e.g. treatment, progress made, side effects of treatment), in order to feel less anxious. However, this large amount of information tends to trigger high level of worry, concern and anxiety in the long – term, which may result in communication difficulties and poor adjustment of monitors (Miller, 1995). Monitors could be provided with an uncontrollably large amount of information about side effects of their breast cancer surgery. Such overload of information may increase focus on physical symptoms in these patients, which may result in preoccupation with physical changes and consequently poor physical and sexual adjustment. For these patients, health practitioners need to be cautious about merely communicating threatening medical information in greater detail. Health

professionals need to recognise that, although monitoring patients may press for more news of danger, such information may not help these patients to cope in the long – term (Miller, 1995). High levels of monitoring may be self - defeating and merely anxiety – producing. Therefore, these patients may require not simply more information but also emotional support facilitating their adjustment to their medical condition (Miller, 1995).

Perceived emotional support was also shown by present findings to be an important factor of emotional adjustment in the Greek patients. Nevertheless, it was not significant for the adjustment of British patients in any domain. Greek women, who perceived the emotional support they received from their social network as high, were also less emotionally adjusted. The absence of any social support effects on the British patients' adjustment and the adverse effect of emotional support on the Greek patients' emotional adjustment could be attributed to cultural differences. The Greek culture is considered a more collectivistic culture than the British, which is considered as more individualistic (Cameron et al., 1983). In collectivistic cultures, when an individual faces a major life event, like a breast cancer diagnosis and treatment, the community is expected to react by providing as much emotional support as possible and by surrounding the patient with a protective network. This may be beneficial for the time close to hospitalisation, diagnosis and right after surgery. However, in the long - term, it may become suffocating for some patients and be perceived as overprotection. As a result, some patients may not be allowed the time and space to face some issues regarding their condition, and their emotional adjustment may be delayed. Such an account is also supported by previous research. Previous studies have suggested that there are no “good” and “bad” predictors of adjustment to mastectomy. Social and family support could play a compensating important role in

patient's adjustment or a destructive one in other cases (Weakland, 1977; Campbell, 1986). Based on the above findings, Greek clinicians may need to monitor closely the significant others' interference with the treatment and adjustment of the patient and be able to intervene and regulate it, in case it becomes too suffocating for the benefit of the patient's recovery.

Finally another issue that appeared to be important for the Greek patients was their sexual adjustment, which seemed to be poorer than the British. A more open approach may need to be employed about the communication of sexual issues regarding breast surgery between Greek medical professionals and patients. The concerns of patients regarding sexual issues and the relationship between treatment and certain sexual difficulties need to be explored, when required, and the patient needs to feel that any discussion about the above issues is welcome by the clinician.

### **8.5. General Contribution of the Present Findings**

The tangible endpoints of all three parts of the present research are summarised below:

- Present findings provided information towards a clinically meaningful working framework of attitudes, beliefs and practices regarding BSE practice, mammography attendance and adjustment to breast cancer surgery.
- Cultural factors were introduced as an important dimension in prioritising breast care behaviours and planning treatment and care for breast cancer patients.
- The present research provided clinically meaningful data for an evaluation and improvement of health promotion campaigns and mass screening services in the UK by: (a) identifying age and culture as two significant dimensions in planning

these services, (b) adding to limited knowledge about BSE practice rates and (c) identifying factors of adherence with breast care behaviours.

- Information was provided towards the introduction of BSE campaigns in Greece. This was achieved by: (a) adding to the limited existing knowledge regarding actual adherence rates, attitudes and knowledge levels about BSE and (b) by identifying factors associated with BSE practice in Greece.
- Present findings provided clinically meaningful information on beliefs and attitudes towards mammography and breast cancer. Such information could contribute to future introduction of a structured mass screening programme or evaluation of existing mammographic services in Greece by health authorities.



### **Declaration of Thesis Publications**

In accordance with Section A7.4 of the regulations for the Degree of Doctor of Philosophy at the University of Stirling, a candidate must state the status of work published, in press, or submitted for publication that is included in the thesis.

In accordance with this regulation, this is the status of the current thesis with regards to publication at the time of submission:

#### **Published:**

Chouliara, Z; Power, KG; Swanson, V; Johnstone, F (2002). Factors associated with breast screening attendance: A controlled comparison between attenders and non-attenders in Scotland. International Journal of Health Promotion and Education, Vol. 40 (3), pp. 78-90.

#### **Under review after re-submission:**

Chouliara, Z; Papadioti - Athanasiou, V; Power, KG; Swanson, V (2003). Practice of and Attitudes towards Breast Self – Examination (BSE): A Cross-Cultural Comparison Between Younger and Older Women in Scotland and Greece, *to Health Care for Women International*

#### **Submitted for publication:**

Chouliara, Z; Power, K; Swanson, V (2003). Factors of Breast Self – Examination (BSE): A Controlled Comparison between Younger and Older Women in Scotland, *Cancer Detection and Prevention*

Chouliara, Z; Power, K; Swanson, V; Booth, D; McNaughton; Kontostolis, E; Docume, A; Karatzias, A (2003). Factors associated with breast cancer surgery. A preliminary cross-cultural comparison between Scotland and Greece, *Psychology, Health and Medicine*

Chouliara, Z; Papadioti – Athanasiou, V; Power, K; Swanson, V (2001). Breast Self – Examination in Younger Women in Greece: Adherence Rates, Attitudes and Information – Seeking, *under review for publication in a Greek Journal*.

## References

- Aaronson, NK and Beckman, J (Ed) (1987). The Quality of Life of Cancer Patients, New York: Raven Press.
- Abelson, RP, Kinder, DR, Peters, MD; Fiske, ST (1982). Affective and semantic components in political person perception. Journal of Personality and Social Psychology, Vol. 42, pp. 619-630.
- Achary, PMRL; Zhao, H; Fan, Z; Gogeneni, S; Pulijaal, VR; Herbst, L; Mahadevia, PS; Jones, JG; Klinger, HP (2003). A candidate metastasis-associated DNA marker for ductal mammary carcinoma. Breast Cancer Research, Vol. 5 (2), pp. 52-58.
- Adler, N and Matthews, K (1994). Health Psychology: Why Do Some People Get Sick and Some Stay Well? Annual Review of Psychology, Vol. 45, pp. 229-259.
- Ajzen, A and Timko, C (1986). Correspondence between Health Attitudes and Behavior. Journal of Basic and Applied Psychology, Vol. 7, pp. 259-76.
- Aiken, LS; West, SG; Woodward, CK and Reno, RR (1994). Health Beliefs and Compliance With Mammography- Screening Recommendations in Asymptomatic Women. Health Psychology, Vol. 13 (2), pp. 122-129.
- Ajzen, I and Fishbein, M (1977) Attitude-behavior relations: A theoretical analysis and review of empirical research. Psychological Bulletin, Vol. 84, pp. 888-918.

Ajzen, I and Fishbein, M (1980). Understanding attitudes and Predicting Behaviour. Englewood Cliffs New Jersey: Prentice – Hall.

Alagna, SW and Reddy, DM (1984). Predictors of Proficient Technique and Successful Lesion Detection in Breast Self- Examination. Health Psychology, Vol. 3 (2), pp. 113-127.

Alexander, FE; Anderson, TJ; Brown, HK; Forrest, AP; Hepburn, W; Kilpatrick, AE; McDonald, C; Muir, BB; Prescott, RJ; Shepherd, SM et al. (1994). The Edinburgh randomised trial of breast cancer screening results after 10 years of follow – up. British Journal of Cancer, Vol. 70(3), pp. 542-548.

Ambrosone, CB; Moysich, KB; Furberg, H; Freudenheim, JL; Bowman, ED; Ahmed, S; Graham, S; Vena, JE; Shields, PG (2003). CYP17 genetic polymorphism, breast cancer, and breast cancer risk factors. Breast Cancer Research, Vol. 5 (2), pp.45-51.

Andersen, BL and Jochimsen, PR (1987). Research design and strategy for studying psychological adjustment to cancer: Reply to Thomas. Journal of Consulting and Clinical Psychology, Vol. 55 (1), pp. 122-124.

Anderson, J and Walker, LG (2000). Psychological factors and cancer progression: involvement of behavioural pathways. In Lewis, CE; O' Brien, RM; Barraclough, J (Eds.). The Psychoimmunology of Cancer, 2<sup>nd</sup> edition, Oxford University Press.

Anderson, TJ; Lam, J; Donnan, P; Alexander, FE; Huggins, A; Muir, BB; Kilpatrick, AE; Chetty, U; Hepburn, W; Smith, A et al. (1991). Comparative pathology of breast cancer in a randomised trial of screening. British Journal of Cancer, Vol. 64 (1), pp. 108-113.

Andersson, I; Aspegren, K; Janson, L (1988). Mammographic screening and mortality from breast cancer: The Malmo mammographic screening trial. British Medical Journal, Vol. 297, pp. 943-948.

Anstice, E (1970a). Coping after a mastectomy. Nursing Times, Vol. 66 (28), pp. 882-883.

Anstice, E (1970b). The emotional operation 1. Nursing Times, Vol. 66 (27), pp. 837-838.

Arora, NK and McHorney, CA (2000). Patient preferences for medical decision making: Who really wants to participate? Medical Care, Vol. 38 (3), pp. 335-341.

Ashcroft, JJ; Leinster, SJ; Slade, PD (1985). Breast cancer – patient choice of treatment: Preliminary communication. Journal of the Royal Society of Medicine, Vol. 78 (1), pp. 43-46.

Assikis, VJ and Jordan, VC (1995). Gynecologic effects of tamoxifen and the association with endometrial carcinoma. International Gynaecology and Obstetrics, Vol. 49 (3), pp. 241-257.

Atkin, C (1973). Instrumental Utilities and Information Seeking. In P. Clarke (Eds.), New Models in Mass Communication Research. Beverly Hills, CA: Sage Publications.

Austoker, J and Humphreys, J (1990). Involving Primary Care Teams in the National Breast Screening Programme, Oxford: NHSBSP Publications.

Austoker, J (1994). Cancer Prevention in Primary Care: Screening and Self – Examination for Breast Cancer. British Medical Journal, Vol. 309, pp. 168-174.

Austoker, J (2003). Breast self examination. Does not prevent deaths to breast cancer, but breast awareness is still important. British Medical Journal, Vol. 326 (7379), pp. 1-2.

Bagby, RM; Parker, JDA; Taylor, GJ (1994). The twenty-item Toronto Alexithymia Scale: I. Item selection and cross-validation of the factor structure. Journal of Psychosomatic Research, Vol. 38 (1), pp. 23-32.

Baider, L; Rizel, S; Kaplan-DeNour, A (1986). Comparison of couples adjustment to lumpectomy and mastectomy. General Hospital Psychology, Vol. 8, pp. 251-257.

Baider, LA and Kaplan De-Nour (1988). Breast cancer – a family affair. In CL Cooper (Ed), Stress and Breast Cancer, pp. 239-252, Oxford: John Wiley and Sons.

Baines, CJ (1984). Impediments to Recruitment in the Canadian National Breast Screening Study: Response and Resolution. Controlled Clinical Trials, Vol. 5, pp. 129-138.

Baines, CJ (1988). Breast self – examination: the known and the unknown. In Day, NE and Miller, AB (Eds). Screening for breast cancer, Toronto: Hans Huber.

Baines, CJ (1992). Breast self – examination. Cancer, Vol. 69, pp. 1942-1946.

Baines, CJ; Vidmar, M; McKeown-Eyssen, G; Tibshirani, R (1997). Impact of menstrual phase on false-negative mammograms in the Canadian National Breast Screening Study. Cancer, Vol. 80, pp. 720-724.

Baker, JA (1988). Breast self – examination among older women. Health Education Research: Theory and Practice, Vol. 3 (2), pp. 181-189.

Baker, LH (1982) Breast Cancer Demonstration Project: Five-year Summary Report. CA Cancer Journal for Clinicians, Vol. 32 (4), pp. 194-225.

Bandura, A (1986). Social Foundation of Thought and Action. Englewood Cliffs, New Jersey: Prentice-Hall.

Bandura, A (1991). Self-efficacy mechanism in physiological activation and health-promoting behavior. In Madden, J (Ed.) Neurobiology of learning, Emotion and Effect, New York: Raven Press.

Bard, M (1970). The price of survival for cancer victims. In AL Strauss (Ed.), Where medicine fails, Chicago: Transaction Publishers.

Barnish, L (1994). Fatigue and the cancer patient. British Journal of Nursing, Vol. 3 (16), pp. 806-809.

Barron, CR; Houfek, JF; Foxall, MJ (1997). Coping style, health beliefs, and breast self – examination. Issues in Mental Health Nursing, Vol. 18, pp.331-350.

Bassett, LW; Bunnell, DH; Cerny, JA; Gold, RH (1986). Screening Mammography: Referral Practices of Los Angeles Physicians. American Journal Roentgenol., Vol. 147 (4), pp. 689-692.

Bassett, LW; Manjikian, V 3<sup>rd</sup>; Gold, RH (1990). Mammography and breast screening. Surgical Clinical North American, Vol. 70 (4), pp. 775-800.

Batchelor, D (2001). Hair and cancer chemotherapy: Consequences and nursing care – a literature study. European Journal of Cancer Care, Vol. 10 (3), pp. 147-163.

- Baum, M (2002). The changing face of breast cancer – past, present and future perspectives. Breast Cancer Research and Treatment, Vol. 75 (Suppl 1), pp. S1-5, discussion S33-35.
- Beadle, GF; Silver, B; Botnick, L; Hellman, S; Harris, JR (1984). Cosmetic results following primary radiation therapy for early breast cancer. Cancer, Vol. 54 (12), pp. 2911-2918.
- Becker, MH (1974). The health belief model and sick role behavior. Health Education Monographs, Vol. 2, pp. 409-419.
- Becker, MH and Maiman, LA (1975). Sociobehavioral determinants of compliance with health and medical care recommendations. Medical Care, Vol. 13, pp. 10-24.
- Becker, MH; Haefner, DP; Mainman, LA (1977b). The health belief model in the prediction of dietary compliance: a field experiment. Journal of Health and Social Behaviour, Vol. 18 (4), pp. 348-366.
- Becker, MH and Rosenstock, IM (1987). Comparing social learning theory and the health belief model. In Ward, WB (Ed.) Advances in Health Education and Promotion (Vol. 2), Greenwich: JAI Press.
- Beckett, M, Redman, S, Lee, C (1990). Breast Self- Examination, Cancer Knowledge and Breast Disease in a Sample of Hunter Valley Women. Behaviour Change, Vol. 7 (3), pp. 136- 142.



Belloc, NB (1973). Relationship of health practices and mortality. Preventive Medicine, Vol. 2, pp.67-81.

Bernstein – Hyman, R; Baker, S; Ephraim, R; Moadel, A et al. (1994). Health Belief Model variables as predictors of screening mammography utilization. Journal of Behavioral Medicine, Vol. 17 (4), pp. 391-406.

Bjurstam, N; Bjorneld, L; Duffy, SW; Smith, TC; Cahlin, E; Erikson, C; Lingaas, H; Mattsson, J; Persson, S; Rudenstam, CM; Sawe-Soderberg, J (1997). The Gothenburg Breast Cancer Screening Trial: preliminary findings on breast cancer mortality for women aged 39-49. Journal of the National Cancer Institute, Vol. 22, pp. 53-55.

Blaxter, M (1990). Health and Lifestyles. London: Tavistock.

Bloom, JR (1982). Social Support, Accommodation to Stress and Adjustment to Breast Cancer. Social Science and Medicine, Vol. 16 (14), pp. 1329-1338.

Bloom, J; Cook, M; Fotopoulis, S; Flamer, D; Gates, C; Holland, JC; Muenz, L; Murawski, B; Pennman, D; Ross, RD (1987). Psychological response to mastectomy: A prospective comparison study. Cancer, Vol. 59, pp. 189-196.

Bloom, JR; Kessler, LG; Pee, D (1992). Psychosocial Assessment of the Recovery from Mastectomy: A Comparison of Static and Dynamic Modelling. Psychology and Health, Vol. 7 (2), pp. 131-146.

Boer, H; Seydel, ER; Taal, E (1994). Knowledge Gap Effects in Health Education on Mass Screening with Mammography. In: Dauwalder JP, editor. Psychology and Promotion of Health. Kirkland: Hogrefe and Huber.

Borrayo, EA and Guarnaccia, CA (2000). Differences in Mexican-born and U.S.-born women of Mexican descent regarding factors related to breast cancer screening behaviors. Health Care for Women International, Vol. 21 (7), pp. 599-613.

Bostrick, PM; Sprafka, JM; Virnig, BA and Potter, JD (1993) Knowledge, Attitudes, and Personal Practices regarding Prevention and Early Detection of Cancer. Preventive Medicine, Vol. 22, pp. 65-85.

Breckler, SJ and Wiggins, E (1989). Affect versus evaluation in the structure of attitudes. Journal of Experimental Social Psychology, Vol. 25, pp. 253-271.

Brenner, DJ; Sawant, SG; Hande, MP; Miller RC; Elliston, CD; Fu, Z; Randers-Pehrson, G; Marino, SA (2002). Routine screening mammography: how important is the radiation-risk side of the benefit – risk equation? International Journal of Radiation Biology, Vol. 78 (12), pp. 1065-1067.

Brett, J and Austoker, J (1999). Evaluation of breast awareness training resource pack for primary care nurses: final report. Oxford: Cancer Research Campaign.

Brett, J and Austoker, J (2001). Women who are recalled for further investigation for breast screening: psychological consequences 3 years after recall and factors affecting re-attendance. Journal of Public Health Medicine, Vol. 23 (4), pp. 292-300.

Brew, FP; Hesketh, B; Taylor, A (2001). Individualist – collectivist differences in adolescent decision making and decision styles with Chinese and Anglos. International Journal of Intercultural Relations, Vol. 25 (1), pp. 1-19.

Brody, S (2003). Alexithymia is inversely associated with women's frequency of vaginal intercourse. Archives of Sexual Behavior, Vol. 32 (1), pp. 73-77.

Brown, J; Buckley, D; Coulthard, A; Dixon, AK; Dixon, JM; Easton, DF; Eeles, RA; Evans, DGR; Gilbert, FG; Graves, M; Hayes, C; Jenkins, JPR; Jones, AP; Keevil, SF; Leach, MO; Liney, GP; Moss, SM; Padhani, AR; Parker, GJM; Pointon, LJ; Ponder,BAJ; Redpath, TW; Sloane, JP; Turnbull, LW; Walker, LG; Warren, RML (2000). Magnetic resonance imaging screening in women at genetic risk of breast cancer: imaging and analysis protocol for the UK multicentre study. Magnetic Resonance Imaging, Vol. 18, pp. 765-776.

Budden, L (1995). Young Women's Breast Self – Examination Knowledge and Practice. Journal of Community Health Nursing, Vol. 12 (1), pp. 23-32.

Bull, AR and Campbell, MJ (1991). Assessment of the psychological impact of a breast screening programme. British Journal of Radiology, Vol. 64 (762), pp. 510-515.

Buls, JG; Jones, IH; Bennett, RC; Chan, DP (1976). Women's attitudes to mastectomy for breast cancer. Medical Journal of Australia, Vol. 2 (9), pp. 336-338.

Bundek, NI, Marks, G and Richardson, JL (1993). Role of Health Locus of Control Beliefs in Cancer Screening of Elderly Hispanic Women. Health Psychology, Vol. 12 (3), pp. 193-199.

Burack, RC and Liang, J (1989). The acceptance and completion of mammography by older black women. American Journal of Public Health, Vol. 79 (6), pp. 721-726.

Burg, MA; Lane, DS; Polednak, AP (1990). Age group differences in the use of breast cancer screening tests: the effects of health care utilization and socioeconomic variables. Journal of Ageing and Health, Vol. 2 (4), pp. 514-530.

Butow, PN; Coates, AS; Dunn, SM (2000). Psychosocial predictors of survival: metastatic breast cancer. Annals of Oncology, Vol. 11 (4), pp. 469-474.

Calnan M (1984). The Health Belief Model and Participation in Programmes for the Early Detection of Breast Cancer: A Comparative Analysis. Social Science and Medicine, Vol. 19, pp. 823-830.

Calnan, MW and Moss, S. (1984). The Health Belief Model and Compliance with Education Given at a Class in Breast Self - Examination. Journal of Health and Social Behavior, Vol. 25 (2), pp. 198-210.

Calnan, M and Rutter, DR (1986). Do health beliefs predict health behaviour? An analysis of breast self – examination. Social Science and Medicine, Vol. 22 (6), pp. 673-678.

Cameron, J; Cowan, R; Holmes, B; Hurst, P; McLean, M (1983). International Handbook of Educational Systems, Vol. 1: Europe and Canada, Chichester: John Wiley and Sons.

Campbell, TL (1986). Family's impact on health: A critical review. Family Systems Medicine, Vol. 4, pp. 135-191.

Caplan, LS; Mandelson, MT; Anderson, LA; Health Maintenance Organisation (2003). Validity of self – reported mammography: examining recall and covariates among older women in a Health Maintenance Organization. American Journal of Epidemiology, Vol. 157 (3), pp. 267-272.

Carver CS; Scheier, MF; Weintraub, JK (1989). Assessing coping strategies: a theoretically-based approach. Journal of Personality and Social Psychology, Vol. 56, pp. 267-283.

Cassileth, BR and Hamilton, JN (1979). The family with cancer. In BR Cassileth (Ed), The cancer patient social and medical aspects of care, pp. 233-247. Philadelphia, PA: Lea and Febiger.

Cassileth, BR; Zupkis, RV; Sutton-Smith, K; March, V (1980). Information and participation preferences among cancer patients. Annals of Internal Medicine, Vol. 92 (6), pp. 832-836.

Cassileth, BR; Lusk, EJ; Miller, DS; Brown, LL; Miller, C (1985). Psychological correlates of survival in advanced malignant disease. New England Journal of Medicine, Vol. 312 (24), pp. 1551-1555.

Cawley, M; Kostic, J; Cappello, C (1990). Information and psychosocial needs of women choosing conservative surgery/primary radiation for early-stage breast cancer. Cancer Nursing, Vol. 13 (2), pp. 90-94.

Celestano, DD, Shapiro, S; Weisman, CS (1982) Cancer Preventive Screening Behavior among Elderly Women. Preventive Medicine, Vol. 11, pp. 454-463.

Celestano, DD and Holtzman, D (1983). Breast self – examination competency: an analysis of self-reported practice and associated characteristics. American Journal of Public Health, Vol. 73, pp. 1321-1323.

Chamberlain, J; Moss, SM; Kilpatrick, AE (1993). National Health Service Breast screening programme results for 1991-2, British Medical Journal, Vol. 307, pp. 353-356.

Champion, VL (1984). Instrument development for health belief model constructs. Advances in Nursing Science, Vol. 6, pp. 73-85.

Champion, VL (1988). Attitudinal variables related to intention, frequency and proficiency of breast self – examination in women 35 and over. Research in Nursing and Health, Vol. 11, pp. 283-291.

Champion, VL (1991). The relationship of selected variables to breast cancer detection in women 35 and older. Oncology Nursing Forum, Vol. 18 (4), pp. 753-739.

Champion, VL (1992). Relationship of age to factors influencing breast self – examination practice. Health Care for Women International, Vol. 13 (10), pp. 1-9.

Champion, VL (1992). The role of breast self – examination in breast cancer screening. Cancer, Vol. 69, pp. 1985-1991.

Champion V and Miller, T (1996). Predicting Mammography Utilization through Model Generation. Psychology. Health and Medicine, Vol. 1 (3), pp. 273-283.

Clark, MA; Rakowski, W; Ehrich, B; Pearlman, DN; Goldstein, M; Dube, CE; Rimer, BK; Woolverton, H (1998). Stages of adopting regular screening mammography: Do women differ in decisional balance within stages? Journal of Health Psychology, Vol. 3 (4), pp. 491-506.

Classification of Occupations (1980). Registrar General.

Clavel, M; Soukop, M; Greenstreet, YL (1993). Improved control of emesis and quality of life with ondansetron in breast cancer. Oncology, Vol. 50 (3), pp. 180-185.

Clover, KA; Redman, S; Forbes, JF; Sanson Fisher, RW; Dickson, JA (1992). Promotion of Attendance for Mammographic Screening through General Practice: A Randomised Trial of Two Strategies. Medical Journal Aust, Vol. 156 (2), pp. 91-94.

Coates, A; Porzsolt, F; Osoba, D (1997). Quality of life in oncology practice: prognostic value of EORTC – OLQ-C30 scores in patients with advanced malignancy. European Journal of Cancer, Vol. 33, pp. 1025-1030.

Coates, D; Wortman, CB; Abbey, A (1979). Reactions to victims. In IH Frieze, D Bar-Tel and JS Carroll (Eds), New approaches to social problems, pp. 21-25, San Francisco: Jossey-Bass.

Coblner, WG (1977). Psychosocial factors in gynaecological or breast malignancies. Hospital Physiology, Vol. 13 (10), pp. 38-40.

Cockburn, J; Staples, M; Hurley, SF; De Luise, T (1994). Psychological consequences of screening mammography. Journal of Medical Screening, Vol. 1 (1), pp. 7-12.

Coe, K; Harmon, MP; Castro, FG; Campbell, MN; Mayer, JA; Elder, JP (1999). Breast self – examination: knowledge and practices of Hispanic women in two Southwestern Metropolitan Areas. Journal of Community Health, Vol. 19 (6), pp. 433-448.



Cohen, M (2002). First – degree relatives of breast – cancer patients: cognitive perceptions, coping, and adherence to breast self – examination. Behavioral Medicine, Vol. 28 (1), pp. 15-22.

Cohen, S and Syme, SL (1985) (Eds). Social Support and Health. New York: Academic Press.

Cole, SR; Bryant, CA; McDermott; Sorrell, C; Flynn, M (1997). Beliefs and Mammography Screening. American Journal of Preventive Medicine, Vol. 13 (6), pp. 439-443.

Coleman, EA (1991). Practice and effectiveness of breast self- examination: a selective review of the literature (1977- 1989). Journal of Cancer Education, Vol. 6, pp. 83- 92.

Conner, MT (1993). Pros and Cons of Social Cognition Models in Health Behaviour. Health Psychology Update, Vol. 14, pp. 24-31.

Constantino, J (2002). The impact of hormonal treatments on quality of life of patients with metastatic breast cancer. Clinical Therapy, Vol. 24 Suppl C: C26-42.

Constanza, ME; Stoddard, AM; Zapka, JG; Gaw, VP; Barth, R (1992). Physician Compliance with Mammography Guidelines: Barriers and Enhancers. Journal of the American Board of Family Practice, Vol. 5., pp. 143-152.

Cooper, WH and Richardson, AJ (1986). Unfair Comparisons. Journal of Applied Psychology, Vol. 71 (2), pp. 179-184.

Costa, LJ; Varella, PC; del Giglio, A (2002). Weight changes during chemotherapy for breast cancer. Sao Paulo Medical Journal, Vol. 120 (4), pp. 113-117.

Cox, JL; Zitner, D; Courtney, KD; MacDonald, DL; Paterson, G; Cochrane, B; Mathers, J; Merry, H; Flowerdew, G; Johnstone, DE (2003). Undocumented patient information: an impediment to quality of care. American Journal of Medicine, Vol. 114 (3), pp. 211-216.

Crane, LA; Kaplan, CP; Bastani, R; Scrimshaw, SCM (1996). Determinants of Adherence Among Health Department Patients Referred for a Mammogram. Women and Health, Vol. 24 (2), pp. 43- 64.

Cromer, BA; Frankel, ME; Keder, BA (1989). Compliance with Breast Self – Examination Instruction in Healthy Adolescents. Journal of Adolescent Health Care, Vol. 10, pp. 105-109.

Cromer, BA, Frankel, ME, Hayes, J, Brown, RT (1992). Compliance with Breast Self- Examination Instruction in High School Students. Clinical Pediatrics, Vol. 31 (4), pp. 215-220.

Cunningham, AJ; Edmonds, CV; Jenkins, GP; Pollack, H; Lockwood, GA; Warr, D (1998). A randomised controlled trial of the effects of group psychological therapy on survival in women with metastatic breast cancer. Psychooncology, Vol. 7 (6), pp. 508-517.

Curry, SJ; Emmons, KM (1994). Theoretical Models for Predicting and Improving Compliance with Breast Cancer Screening. Annals of Behavioral Medicine, Vol. 16 (4), pp. 302-16.

Cuzick, J; International Breast Cancer Intervention Study (2001). A brief review of the International Breast Cancer Intervention Study (IBIS), the other current breast cancer prevention trials and proposals for future trials. Annals of NY Academy of Science, Vol. 949, pp. 123-133.

Cuzick, J; Forbes, J; Edwards, R; Baum, M; Cawthorn, S; Coates, Hamed, H; Howell, A; Powles, T; IBIS investigators (2002). First results from the International Breast Cancer Intervention Study (IBIS-I): a randomised prevention trial. Lancet, Vol. 360 (9336), pp. 817-824.

Danigelis, NL; Robertson, NL; Worden, JK; Flynn, BS et al. (1995). Breast Screening by African- American Women: Insights from a Household Survey and Focus Groups. American Journal of Preventive Medicine, Vol. 11 (5), pp. 311-317.

Davis, PJ and Schwartz, GE (1987). Repression and the inaccessibility of affective memories. Journal of Personality and Social Psychology, Vol. 52, pp. 155-162.

Davison, KP; Pennebaker, JW; Dickerson, SS (2000). Who Talks? The Social Psychology of Illness Support Groups. American Psychologist, Vol. 55 (2), pp. 205-217.

Davona, M and Ferrari, S (2002). Anemia and epoetin alfa in high – dose chemotherapy programs for breast cancer patients. Seminars in Oncology, Vol. 29 (3 Suppl 8), pp. 21-25.

Day NM and Miller AB (Eds.) (1988). Screening for Breast Cancer. Toronto: Hans Huber.

De Koning, HJ; Boer, R; Warmerdam, PG; Beemsterboer, PMM; van der Maas, PJ (1995). Quantitative interpretation of age – specific mortality reductions from the Swedish breast cancer – screening trials. Journal of National Cancer Institute, Vol. 87 (16), pp. 1217-1223.

De Koning, HJ; Fracheboud, J; Boer, R; Verbeek, AL; Collette, HJ; Hendriks, JH; van Ineveld, BM; de Bruyn, AE; van der Maas, PJ. Nation – wide breast cancer screening in The Netherlands: support for breast – cancer mortality reduction. National Evaluation Team for Breast Cancer Screening (NETB) (1995). International Journal of Cancer, Vol. 60 (6), pp. 777-780.

De Waard, F; Rombach, JJ; Colletle, HJ; Stotbloom, B (1984). Breast Cancer Risk Associated with Reproductive Factors and Breast Parenchymal Patterns. Journal of the National Cancer Institute, Vol. 72 (6), pp. 1277-1282.

Dean, C.; Roberts, M.M.; French, K.; Robinson, S. (1986) Psychiatric Morbidity after Screening for Breast Cancer. Journal of Epidemiology and Community Health, Vol. 40 (1), pp. 71-5.

Dean, C and Surtees, PG (1989). Do psychological factors predict survival in breast cancer? Journal of Psychosomatic Research, Vol. 33 (5), pp. 561-569.

Den Otter, W; Merchant, TE; Beijerinck, D; Koten, JW (1993). Exclusion from mammographic screening of women genetically predisposed to breast cancer will probably eliminate mammographically induced breast cancer. Anticancer Research, Vol. 13 (4), pp. 1113-1115.

Derogatis, L; Abeloff, M; Melisaratos, N (1979). Psychological coping mechanism and survival time in metastatic breast cancer. Journal of the American Medical Association, Vol. 242 (14), pp. 1504-1508.

Devitt, JE (1989) False Alarms of Breast Cancer. Lancet, Vol. 2, pp. 1257-8.

Diehl, T and Kaplan, D (1985). Breast masses in adolescent females. Journal of Adolescent Health Care, Vol. 6, pp. 353-357.

Dilhujdy, MH and Barreau, B (1997). The debate over mass mammography: is it beneficial for women? European Journal of Radiology, Vol. 24, pp. 86-93.

Dolapsakis, G; Vlachonikolis, IG; Varveris, C; Tsatsakis, AM (2001). Mammographic findings and occupational exposure to pesticides currently in use on Crete. European Journal of Cancer, Vol. 37 (12), pp. 1531-1536.

Donato, F; Bollani, A; Spiazzi, R; Soldo, M; Pascquale, L; Monarca, S; Lucini, L; Nardi, G (1991). Factors associated with non-participation of women in a breast cancer screening programme in a town in northern Italy. Journal of Epidemiology and Community Health, Vol. 45 (1), pp. 59-64.

Donegan, W; Harts, A; Rimm, A (1978). The association of body weight with recurrent cancer of the breast. Cancer, Vol. 41 (4), pp. 1590-1594.

Downie, PA (1978). Rehabilitation. In T Tiffany (Ed), Oncology for nurses and health care professionals: Vol. 2 Care and support, pp. 133-155. London: George Allen and Unwin.

Drossaert, CHC; Boer, H.; Seydel, ER (1996). Health Education to improve Repeat Participation in the Dutch Breast Cancer Screening Programme: Evaluation of a leaflet tailored to Previous Participants. Patient Education and Counselling, Vol. 28 (2), pp. 121-131.

Duffy, SW; Tabar, L; Fagerberg, G; Gad, A; Grontoft, O; South, MC; Day, NE (1991). Breast screening, prognostic factors and survival. Results from the Swedish two county study. British Journal of Cancer, Vol. 64 (6), pp. 1133-1138.

Duffy, SW; Tabar, L; Chen, HH; Holmqvist, M; Yen, MF; Abdsalah, S; Epstein, B; Frodis, E; Ljungberg, E; Hedborg-Melander, C; Sundbom, A; Tholin, M; Wiege, M; Akerlund, A; Wu, HM; Tung, TS; Chiu, YH; Chiu, CP; Huang, CC; Smith, RA; Rosen, M; Stenbeck, M; Holmberg, I (2002). The impact of organised mammography service screening on breast carcinoma mortality in seven Swedish counties. Cancer, Vol. 95 (3), pp. 458-469.

Duke, SS; Gordon - Sosby, K; Reynolds, KD; Grant, IT (1994). A study of Breast Cancer Practices and Beliefs in Black Women Attending Public Health Clinics. Health Education Research, Vol. 9 (3), pp. 331- 342.

Dunkel-Schetter, C (1984). Social support and cancer: Findings based on patient interviews and their implications. Journal of Social Issues, Vol. 40, pp. 77-98.

Dyer, C (1995). Beginning Research in Psychology: A practical guide to Research Methods and Statistics. Oxford: Blackwell Publishers.

Eardley, A and Elkind, A (1990). A pilot study of attendance for breast cancer screening. Social Science and Medicine, Vol. 30, pp. 693-699.

Elkind, A and Eardley, A (1990). Consumer satisfaction with breast screening: A Pilot Study. Journal of Public Health Medicine, Vol. 12 (1), pp. 15-18.

Ell, K; Nishimoto, R; Morvay, T; Mantell, J; Hamovitch, M (1989). A longitudinal analysis of psychological adaptation among survivors of breast cancer. Cancer, Vol. 63(2), pp. 406-413.

Ellman, R; Angeli, N; Christians, A; Moss, S; Chamberlain, J; Maguire, P (1989). Psychiatric Morbidity Associated with Screening for Breast Cancer. British Journal of Breast Cancer, Vol. 60 (5), pp. 781-784.

Ellman, R; Moss, SM; Coleman, D; Chamberlain, J (1993). Breast self – examination programmes in the trial of early detection of breast cancer: ten year findings. British Journal of Cancer, Vol. 68 (1), pp. 208-212.

Engel, J; Ludwig, MS; Schubert-Fritschle, G; Tretter, W; Holzel, D (2001). Cancer prevention and the contribution of cancer registries. Journal of Cancer Research in Clinical Oncology, Vol. 127 (6), pp. 331-339.

Eurostat (1995a). Women and men in the European Union, Luxembourg: Office for official publications of the European Community.

Euster, S (1979). Rehabilitation after mastectomy: The group process. Social Work Health Care, Vol. 4 (3), pp. 251-263.



Evans, SH and Clarke, P (1983). When Cancer Patients Fail to Get Well: Flaws in Health Communications. In Bostrom, RN (Ed), Communication Yearbook 7. Beverly Hills, CA: Sage Publications.

Fabrega, H (1979). The scientific usefulness of the idea of illness. Perspectives in Biology and Medicine, Vol. 22, pp. 545-559.

Facione, NC (1993). Delay Versus Help-Seeking for Breast Cancer Symptoms: A Critical Review of the Literature on Patient and Provider Delay. Social Science and Medicine, Vol. 36 (12), pp. 1521-1534.

Faden, FR; Becker, C; Lewis, C; Freedman, J; Faden, AI (1981). Disclosure of Information to Patients in Medical Care. Medical Care, Vol. 19, pp. 718-733.

Fajardo, LL; Saint-Germain, M; Meakem, TJ; Rose, C; Hillman, BJ (1992). Factors influencing Women to undergo Screening Mammography. Radiology, Vol. 184 (1), pp. 59-63.

Faller, H (1997). Do psychological factors modify survival of cancer patients I: Review of the literature. Psychotherapy and Psychosomatics in Medical Psychology, Vol. 47 (5), pp. 163-269.

Fallowfield, LJ; Baum, M; Maguire, GP (1986). Effects of breast conservation on psychological morbidity associated with diagnosis and treatment of early breast cancer. British Medical Journal, Vol. 293 (6558), pp. 1331-1334.

Fallowfield, LJ; Hall, A; Maguire, GP; Baum, M (1990). Psychological outcomes of different treatment policies in women with early breast cancer outside a clinical trial. British Journal of Medicine, Vol. 301 (6765), pp. 575-580.

Fallowfield, LJ; Rodway, A; Baum, M (1990). What are the Psychological Factors influencing Attendance, Non- attendance and Re- attendance at a Breast Screening Centre? Journal of Research in Society and Medicine, Vol. 83 (9), pp. 547-51.

Fallowfield, L and Clark, A (1991). Breast Cancer, Fitzpatrick and Newman, S (Eds), London: Routledge.

Fallowfield, L; Hall, A; Maguire, P; Baum, M; Hern, RP (1994). Psychological effects of being offered choice of surgery for breast cancer. British Medical Journal, Vol. 309, page 448.

Falvo, D and Tippy, PK (1993). Comparison of Interventions to Increase Asymptomatic Women's Use of Mammography Screening. Health Values, Vol. 17 (1), pp.12-17.

Faulkner, A and Maguire, P (1984). Teaching ward nurses to monitor cancer patients. Clinical Oncology, Vol. 10, pp. 383-389.

Fawzy, FI (1994). Immune effects of a short – term intervention for cancer patients. Advances, Vol. 10 (4), pp. 32-33.

Fawzy, FI and Fawzy, NW (1994). A structured psychoeducational intervention for cancer patients. General Hospital Psychiatry, Vol. 16 (3), pp. 149-192.

Fawzy, FI; Fawzy, NW; Arndt, LA; Pasnau, RO (1995). Critical review of psychosocial interventions in cancer care. Archives of General Psychiatry, Vol. 52 (2), pp. 100-113.

Feather, B and Wainstock, JM (1989). Perceptions of postmastectomy patients. II. Social support and attitudes towards mastectomy. Cancer Nursing, Vol. 12 (5), pp. 301-309.

Feig, SA (1988) Decreased Breast Cancer Mortality through Mammography Screening: Results of Clinical Trials. Radiology, Vol. 167, pp. 659-665.

Feig, SA (1988). Decreased breast cancer mortality through mammography screening: Results of clinical trials. Radiology, Vol. 167, pp. 479-490.

Feldman, JG; Carter, AC; Nicastrì, AD; Hosat, ST (1981). Breast self – examination, relationship to stage of breast cancer at diagnosis. Cancer, Vol. 47, pp. 2740-2745.

Festinger, LA (1954). A theory of social comparison processes. Human Relations, Vol. 7, pp. 117-140.

Fink R, Shapiro S; Lewison J (1968). The Reluctant Participant in Breast Cancer Screening Programme. Public Health Reports, Vol. 83, pp. 479-490.

Fishbein, M and Ajzen, I (1974). Attitudes towards objects as predictors of single and multiple behavioral criteria. Psychological Review, Vol. 81, pp. 59-74.

Fletcher, SW; O'Malley, MS; Earp, JL; Morgan, TM; Lin, S; Degnan, D (1990). How best to teach women breast self – examination. A randomised controlled trial. Annals of Internal Medicine, Vol. 112 (10), pp. 772-779.

Fletcher, SW; Blacks, W; Haris, R; Rimer, BK; Schapiro, S (1993). Report on the International Workshop on Screening for Breast Cancer. Journal of the National Cancer Institute, Vol. 85 (20), pp. 1644-1655.

Flora, JA; Maibach, EW; Maccoby, N (1989). The Role of Media across four Levels of Health Promotion Intervention. Annual Review of Public Health, Vol. 10, pp. 181-201.

Fobair, P and Cordoba, CS (1982). Scope and magnitude of the cancer problem in psychosocial research. In J Cohen, JW Cullen and LR Martin (Eds), Psychological aspects of cancer, pp. 9-29, New York: Raven Press.

Foley, EC; D' Amico, F; Merenstein, JH (1990) Improving Mammography Recommendation: A Nurse- initiated Intervention. Journal of the American Board of Family Practice, Vol. 3 (2), pp. 87-92.

Foster, RS and Costanza, MC (1984). Breast self- examination practices and breast cancer survival. Cancer, Vol. 53, pp. 999- 1005.

Foster, R.; Worden, J., Constanza, M; Solomon, L. (1992). Clinical breast examination and self- examination. Cancer, Vol.69, pp. 1992- 1998.

Fox, H; Walker, LG; Heys, SD; Ah-See, AK; Eremin, O (1997). Are patients with mastalgia anxious, and does relaxation therapy help? The Breast, Vol. 6, pp. 138-142.

Fox, SA; Kimme-Smith, C; Klos, DS (1988) The Technology of Mammography: Misunderstood and Underutilized. International Journal of Technology Assessment in Health Care, Vol. 4, pp. 521-544.

Fox, SA; Murata, PJ; Stein, JA (1991). The Impact of Physician Compliance on Screening Mammography for Older Women. Archives of Internal Medicine, Vol.151, pp. 50-56.

Frank, JW and Mai, V (1985). Breast self- examination in young women. More harm than good? Lancet, Vol. 2, pp.654-657.

Franzoi, SL (1996). Social Psychology. Marquette University: Brown and Benchmark Publishers.

Fraser, SCA; Ramirez, AJ; Ebbs, SR; Fallowfield, LJ; Dobbs, HJ; Richards, MA; Bates, T; Baum, M (1993). A daily diary for quality of life measurement in advanced breast cancer trials. British Journal of Cancer, Vol. 67, pp. 341-346.

Freimuth, VS (1987). The Diffusion of Supportive Information. In TL Albrecht and MB Adelman (Eds.) Communicating Social Support. Newbury Park, CA: Sage Publications.

French K, Porter, AM; Robinson, SE; McCallum, FM; Howie JR; Roberts MM (1982). Attendance at a Breast Screening Clinic: A Problem of Administration or Attitudes. British Medical Journal, Vol. 285 (6342), pp. 617-620.

Friedenson, B (2000). Is mammography indicated for women with defective BRCA genes? Implications of recent scientific advances for the diagnosis, treatment and prevention of hereditary breast cancer. Medscape General Medicine, Vol. 2 (1). In <http://www.medscape.com/viewarticle/408048>.

Friedman, LC; Baer, PE; Lewy, A; Lane, M; Smith, FE (1989). Predictors of psychosocial adjustment to breast cancer. Journal of Psychosocial Oncology, Vol. 6, pp. 75-94.

Friedman, LC, Nelson, DV, Webb, JA, Hoffman, LP, Baer, PE (1994) Dispositional Optimism, Self- efficacy, and Health Beliefs as Predictors of Breast Self-Examination. American Journal of Preventive Medicine, Vol. 10(3), pp. 130- 135.

Friedrich, MA (1991). Mammographic equipment, technique and quality control. Current Opinions in Radiology, Vol. 3 (4), pp. 571-578.

Frisell, J; Elkund, G; Hellstrom, L; Lidbrink, E; Rutqvist, LE; Somell, A (1991). Randomised study of mammography screening. Preliminary report on mortality in the Stockholm trial. Breast Cancer Research and Treatment, Vol. 18 (1), pp. 49-56.

Frisell, J; von Rosen, A; Wiege, M; Nilsson, B; Goldman, S (1992). Interval cancer and survival in a randomised breast cancer screening trial in Stockholm. Breast Cancer Research and Treatment, Vol. 24 (1), pp. 11-16.

Fuller, S; McDermott, R; Roetzheim, R; Marty, P. (1992) Breast Cancer Beliefs of Women Participating in a Television-promoted Mammography Screening Project. Public Health Reports, Vol. 107 (6), pp. 682-90.

Fullerton, JT; Kritz-Silverstein, D; Sadler, GR; Barrett- Connor, E (1996). Mammography Usage in a Community- Based Sample of Older Women. Annals of Behavioral Medicine, Vol. 18 (1), pp. 67-72.

Fulton, JP; Buechner, JS; Scott, HD; DeBuono, BA; Smith, RA; Kovenock, D (1991). A Study Guided by the Health Belief Model of the Predictors of Breast Cancer Screening of Women Ages 40 and Older. Public Health Reports, Vol. 106 (4), pp. 410-421.

Fulton-Kehoe, D; burg, MA; Lane, DS (1992). Are self – reported dates of mammograms accurate? Public Health Review, Vol. 20 (3-4), pp. 233-240.

Ganz, PA; Schag, CC; Polinsky, ML; Heinrich, RL; Flack, VF (1987). Rehabilitation needs and breast cancer: The first month after primary therapy. Breast Cancer Research and Treatment, Vol. 10 (3), pp. 243-253.

Ganz, P; (1990). Current issues in cancer rehabilitation. Cancer, Vol. 65, pp. 742-751.

Ganz, P; Lee, J; Siau, J (1991). Quality of life assessment: an independent prognostic variable for survival in lung cancer. Cancer, Vol.67, pp. 3131-3135.

Ganz, PA (2001). Impact of tamoxifen adjuvant therapy on symptoms, functioning, and quality of life. Journal of the National Cancer Institute, Vol. 30, pp. 130-134.

Gard, D Edwards, PW; Harris, J; McCormack, G (1988). Sensitizing effects of pretreatment measures on cancer chemotherapy nausea and vomiting. Journal of Consulting and Clinical Psychology, Vol. 56, pp. 80-84.

General Medical Council (1993). Tomorrow's Doctors: Recommendations on Undergraduate Medical Education. General Medical Council, December.

Georgaki, S; Kalaidopoulou, O; Liarmakopoulos, I; Mystakidou, K (2002). Nurses' attitudes toward truthful communication with patients with cancer. A Greek study. Cancer Nursing, Vol. 25 (6), pp. 436-441.

Gerard, K; Turnbull, D; Lange, M and Mooney, G Economic Evaluation of Mammography Screening: Information, Reassurance and Anxiety. Health Economics



Research Unit (HERU) Discussion Paper 01/92. University of Aberdeen, Departments of Public Health and Economics.

Geyer, S (1992). Artefacts in “limited prospective” designs? Testing confounding effect on response behaviour of women prior to breast surgery. Journal of Psychosomatic Research, Vol. 36 (2), pp. 107-116.

Gilbar, O (1996). The connection between the psychological condition of breast cancer patients and survival: A follow – up after eight years. General Hospital Psychiatry, Vol. 18 (4), pp. 226-270.

Gilbert, FJ; Cordiner, CM; Affleck, IR; Hood, DB; Mathieson, D; Walker, LG (1998). Breast Screening: the Psychological Sequelae of False-Positive Recall in Women with and without a Family History of Breast Cancer. European Journal of Cancer, Vol. 34 (13), pp. 2010-2014.

GIVIO (Interdisciplinary Group for Cancer Care Evaluation) Italy: What doctors tell patients with breast cancer about diagnosis and treatment: Findings from a study in general hospitals. British Journal of Cancer, Vol. 54 (2), pp. 319-326.

Glanz, K and Lerman, G (1992). Psychosocial Impact of Breast Cancer: A Critical Review. Annals of Behavioral Medicine, Vol. 14 (3), pp. 204-212.

Glanz, K; Resch, N; Lerman, C; Rimer, BK (1996). Black – White Differences in Factors Influencing mammography Use among Employed Female Health Maintenance Organization Members. Ethnicity and Health, Vol. 1 (3), pp. 201-220.

Goldbloom, R (1985). Self – examination by adolescents. Paediatrics, Vol. 76, pp. 126-128.

Goldsmith, HS and Alday, ES (1971). Role of surgeon in the rehabilitation of the breast cancer patient. Cancer, Vol. 28 (6), pp. 1672-1675.

Goodwin, PJ (2001). The effect of group psychosocial support on survival in metastatic breast cancer. New England Journal of Medicine, Vol. 345 (24), pp. 1719-1726.

Gordon, DR and Paci, E (1997). Disclosure practices and cultural narratives: understanding concealment and silence around cancer in Tuscany, Italy. Social Science and Medicine, Vol. 44 (10), pp. 1433-1452.

Gorzynski, JG; Holland, JC; Katz, J; Weiner, B; Zumoff, B; Fukushima, D; Levin, J (1980). Stability of ego defenses and endocrine responses in women prior to breast biopsy and ten years later. Psychosomatic Medicine, Vol. 42 (3), pp. 323-328.

Gotay, CC (1984). The experience of cancer during early and advanced stages: The views of patients and their mates. Social Science and Medicine, Vol. 18 (7), pp. 605-613.

Gourash, N (1978). Help- Seeking: A Review of the Literature. American Journal of Community Psychology, Vol. 6, pp. 413-423.

Grady , KE (1992). The efficacy of breast self- examination. Journal of Gerontology, Vol. 47, pp. 69-74.

Grady, KE; Lemkau, JP; McVay, JM; Reisine, ST (1992). The importance of physician encouragement in breast cancer screening of older women. Preventive Medicine, Vol. 21, pp. 766-780.

Gram, IT; Lund, E; Slenker, SE (1990) Quality of Life following a False Positive Mammogram. British Journal of Cancer, Vol. 62, pp. 1018-22.

Gram, IT and Slenker, SE (1992). Cancer anxiety and attitudes toward mammography among screening attenders, non-attenders and women never invited. American Journal of Public Health, Vol. 82 (2), pp. 249-251.

Grassi, L; and Molinari, S (1988). Pattern of emotional control and psychological reactions to breast cancer: A preliminary report. Psychological Reports, Vol. 62 (3), pp. 727-732.

Green LW and Roberts, BJ (1974). The Research Literature on why Women delay in seeking Medical Care for Breast Symptoms. Health Education Monographs, Vol. 2 (2), pp. 129-177.

Greer, S; Morris, T; Pettingale, KW (1979). Psychological response to breast cancer: effect on outcome. Lancet, Vol. 2 (8146), pp. 785-787.

Greer, S (1991). Psychological response to cancer and survival. Psychological Medicine, Vol. 21 (1), pp. 43-49.

Greer, S (1999). Mind – body research in psychooncology. Advances in Mind Medicine, Vol. 15 (4), pp. 236-244.

Grober, SE (2002). Resources for treatment of chemotherapy-related cognitive difficulty. Cancer Practice, Vol. 10 (4), pp. 216-218.

Groenendijk, RP; ter Horst, H; Tinnemans, JG; van der Sluis, RF; Ruers, TJ; Wobbes, T (2002). Critical analysis of the treatment of non-palpable cancer: Toward a less invasive future? World Journal of Surgery, Vol. 26 (3), pp. 285-289.

Guthrie, JR; Smith, AMA; Dennerstein, L; Morse, C (1994). Physical activity and the menopause experience: A cross-sectional study. Mauritas, Vol. 20 (2-3), pp. 71-80.

Haiart, DC; McKenzie, L; Henderson et al. (1990). Mobile breast screening: factors affecting uptake, efforts to increase response and acceptability. Public Health, Vol. 104 (4), pp. 239-247.

Hailey, BJ (1986). Breast Self- Examination Among College Females. Women and Health, Vol. 11 (3-4), pp. 55-65.

Hailey, BJ and Bradford, AC (1991). Breast self – examination and mammography among university staff and faculty. Women and Health, Vol. 17 (3), pp. 59-77.

Hall, SC; Stein, CH; Stephenson, HS; Goldstein, MK; Pennypacker, HS (1980). Improved Detection of Human Breast Lesions following Experimental Training. Cancer, Vol. 46, pp. 408-414.

Hallal, JC (1982). The Relationship of Health Beliefs, Health Locus of Control, and Self Concept to the Practice of Breast Self- Examination in Adult Women. Nursing Research, Vol. 31 (3), pp. 127- 142.

Harper, GR and Englisbe, BH (1993). Prevention and screening for breast screening. Cancer Detection Preview, Vol. 174 (4-5), pp. 551-555.

Harrison, J; Haddad, P; Maguire, P (1995). The impact of cancer on key relatives: a comparison of relative and patient concerns. European Journal of Cancer, Vol. 31A, pp. 1736-1740.

Hayward, RA. Shapiro, MF; Freeman, HE; Corey, CR (1988). Who gets screened for Cervical and Breast Cancer. Archives of Internal Medicine, Vol. 148 (5), pp. 1177-1181.

Health Education Authority (1988). A Guide to Examining your Breasts.

Health Education Authority (1989). Breast Screening Programme: attenders and non-attenders in Epping. Health Education Authority, London.

Heim, E; Augustiny, KF, Blaser, A, et al. (1987). Coping with breast cancer: A longitudinal breast cancer study. Psychotherapy Psychosomatics, Vol. 48 (1-4), pp. 44-59.

Heisler, M; Smith, DM; Hayward, RA; Krein, SL; Kerr, FA (2003). How well patients; assessments of their diabetes self – management correlate with actual glycemic control and records of recommended diabetes services? Diabetes Care, Vol. 26 (3), pp. 738-743.

Hellenic Anticancer Institute (2000). Breast Cancer.

Henderson, JC; Harris, JR; Kinne, DW; Hellman, S (1989). Breast cancer. In DeVita, VT, Hellman, S and Rosenberg, SA (Eds), Cancer: Principles and Practice of Oncology, Philadelphia, PA: Lippincott.

Hicks, MJ; Davis, JR; Layton, JM; Present, AJ (1979). Sensitivity of mammography and physical examination of the breast for detecting breast cancer. Journal of the American Medical Association, Vol. 242 (19), pp. 2080-2083.

Hill, D, White, V, Jolley, D; Mapperson, K (1988). Self examination of the breast: is it beneficial? Meta- analysis of studies investigating breast self- examination and extent of disease in patients with breast cancer. Behavioral Medicine Journal, Vol. 297, pp.271- 275.

Hill, DJ and Shugg, D (1989). Breast self- examination practices and attitudes among breast cancer, benign breast disease and general practice patients. Health Education Research, Vol. 4 (2), pp. 193-203.

Hilton, BA (1989). The relationship of uncertainty, control, commitment, and threat of recurrence to coping strategies used by women diagnosed with breast cancer. Journal of Behavioral Medicine, Vol. 12 (1), pp. 39-54.

Holland, JC; Kortzun, AH; Tross, S; Cella, DF; Norton, L; Wood, W (1986). Psychosocial factors and disease-free survival in stage III breast cancer. Proceedings of the American Society of Clinical Oncology, Vol. 5, pp. 237 (Abstract No. 928).

Holland, JC and Rowland, JH (1989) (Eds). Psychooncology: Psychological Care of the Patient with Cancer, New York: Oxford University Press.

Holland, JC (1991). Psychosocial variables: Are they factors in cancer risk or survival? In Holland, JC, Lesko, LM and Massie, M (Eds), Current Concepts in Psycho – Oncology IV, pp. 35-34. New York: Memorial Sloan-Kettering Cancer Center.

Holland, JC and Rowland, JH (1998) (Eds). Psycho-oncology, New York: Oxford University Press.

Hopkins, MB (1986). Information-seeking and adaptation outcomes in women receiving chemotherapy for breast cancer. Cancer Nursing, Vol. 9 (5), pp. 256-262.

Horton, JA; Romans, MC; Cruess, DF (1992). Mammography Attitudes and Usage Study. Women's Health Issues, Vol. 2, pp. 180-187.

Horton, JA; Cruess, DF; Romans, MC (1996). Compliance with Mammography Screening Guidelines: 1995 Mammography Attitudes and Usage Study Report. Women's Health Issues, Vol. 6 (5), pp. 239-245.

Horwitz, RI and Yu, EC (1984). Assessing the reliability of epidemiologic data obtained from medical records, Journal of Chronic Disease, Vol. 37 (11), pp. 825-831.

Howard, J (1987). Using Mammography for Cancer Control: An Unrealized Potential. CA- A Cancer Journal for Clinicians, Vol. 37, pp. 33-48.

Howe, H (1981). Social factors associated with breast self – examination among high risk women. American Journal of Public Health, Vol. 71, pp. 251-255.

Howe, HL (1992). Repeat Mammography Among Women Over 50 Years of Age. American Journal of Preventive Medicine, Vol. 8 (3), pp. 182- 185.



Howell, DC (1992). Statistical Methods for Psychology (3<sup>rd</sup> edition), Belmont, California: Duxbury Press.

Huang, EY; Chen, HC; Wang, CJ; Sun, LM; Hsu, HC (2002). Predictive factors for skin telangiectasia following post-mastectomy electron irradiation. The British Journal of Radiology, Vol. 75 (893), pp. 444-447.

Hughes, J (1982). Emotional reactions to the diagnosis and treatment of early breast cancer. Journal of Psychosomatic Research, Vol. 26 (2), pp. 277-283.

Hurley, SF and Kaldor, JM (1992). The benefits and risks of mammographic screening for breast cancer. Epidemiologic Review, Vol. 14, pp. 101-130.

Hyman, RB and Baker, S (1992). Construction of the Hyman - Baker Mammography Questionnaire a measure of Health Belief Model variables. Psychological Reports, Vol. 71 (3), pp. 1203-1215.

Hyman, RB; Baker, S; Ephraim, R; Moadel, A; Philip, J (1994). Health Belief Model Variables as Predictors of Screening Mammography Utilization. Journal of Behavioral Medicine, Vol. 17 (4), pp. 391-406.

Iannuzzi, CM; Atencio, DP; Green, S; Stock, RG; Rosenstein, BS (2002). ATM mutations in female breast cancer patients predict for an increase in radiation-induced late effects. International Journal of Radiation Oncology, Vol. 52 (3), pp. 606-613.

Iconomou, G; Viha, A; Koutras, A; Vagenakis, A; Kalofonos, HP (2002). Information needs and awareness of diagnosis in patients with cancer receiving chemotherapy: A report from Greece. Palliative Medicine, Vol. 16 (4), pp. 315-321.

Igram, MA (1989). Psycho-Social Aspects of Breast Cancer. Journal of Applied Rehabilitation Counselling, Vol. 20 (2), pp. 23-27.

Iino, Y; Sugamata, N; Aoyagi, H; Takeo, T; Takei, H; Horiguchi, J; Tak, Y; Yokoe, T; Ohwada, S; Morishita, Y (1994). Nonpalpable breast cancer. Anticancer Research, Vol. 14 (5B), pp. 2193-2195.

Interdisciplinary Group for Cancer Care Evaluation (GIVIO) (1991). Practice of breast self – examination: Disease extent at diagnosis and patterns of surgical care: A report from an Italian study. Journal of Epidemiology and Community Health, Vol. 45 (2), pp. 112-116.

Irvine, D; Brown, Crooks, D; Roberts, J; Browne, G (1991). Psychosocial adjustment in women with breast cancer. Cancer, Vol. 67 (4), pp. 1097-1117.

Israel, BA and Schurman, SJ (1990). Social support, control, and the stress process. In Glanz K, Lewis, FM, Rimer, BK (Eds), Health Behavior and Health Education: Theory, Research and Practice, pp. 187-215. San Francisco: Jossey – Bass.

Jacob, TC; Penn, NE; Kulik, TA; Spieth, LE (1992). Effects of cognitive style and maintenance strategies on breast self – examination (BSE) practice by African American women. Journal of Behavioral Medicine, Vol. 15, pp. 589-609.

Jamison, KR; Wellisch, DK; Pasnau, RO (1978). Psychosocial aspects of mastectomy: I. The woman's perspective. American Journal of Psychiatry, Vol. 135 (4), pp. 431-436.

Jamison, RN; Burish, TG; Wallston, KA (1987). Psychogenic factors in predicting survival of breast cancer patients. Journal of Clinical Oncology, Vol. 5, pp. 768-772.

Jang, Y; Li, W; Hwang, MT; Chang, WY (1998). Factors related to Returning to Work following a Work-Oriented Occupational Therapy Program for individuals with physical disabilities. Journal of Occupational Rehabilitation, Vol. 8 (2), pp. 141-151.

Janis, I and Mann, L (1977). Decision Making: A Psychological Analysis of Conflict, Choice and Commitment, New York: The Free Press.

Janis, I (1982) (Ed.). Counselling on Personal Decisions, New Haven: Yale University Press.

Janz, NK and Becker, MH (1984). The Health Belief Model: A decade later. Health Education Quarterly, Vol. 11 (1), pp. 1-47.

Job, RFS (1988). Effective and ineffective use of fear in health promotion campaigns.

American Journal of Public Health, Vol. 78, pp. 163-167.

Johnson, JD and Meischke, H (1991). Cancer Information: Women's Source and

Content Preferences. Journal of Health Care Marketing, Vol.11, pp. 37-44.

Johnson, JD and Meischke, H (1993). Differences in the Evaluations of

Communication Sources by Women Who Have Had a Mammogram. Journal of

Psychosocial Oncology, Vol. 11 (1), pp. 83-101.

Johnson, JE; Lauver, DR; Nail, LM (1989). Process of coping with radiation therapy.

Journal of Consulting and Clinical Psychology, Vol. 57 (3), pp. 358-364.

Kane, RL and Deuschle, KWQ (1967). Problems in Patient-doctor Communication.

Medical Care, Vol. 5, pp. 260.

Kaplan, DM (1982). Intervention strategies for families, pp.221-233. In J Cohen, JW

Cullen and Martin (Eds), Psychological aspects of cancer. New York: Raven Press.

Karatzias, A; Power, KG; Swanson, V (2002). Bullying and victimisation in Scottish

secondary schools: Same or separate entities? Aggressive Behavior, Vol. 28 (1), pp.

45-61.

Karjalainen, S and Pukkala, E (1990). Social Class as a prognostic Factor in Breast

Cancer Survival. Cancer, Vol. 66 (4), pp. 819-826.

Kash, KM; Holland, JC; Halper, MS; Miller, DG (1992). Psychological Distress and Surveillance Behaviors of Women with a Family History of Breast Cancer. Journal of the National Cancer Institute, Vol. 84, pp. 24-30.

Katz, RC, Kelly, M; Wills, J (1995). Cancer Awareness and Self- Examination Practices in Young Men and Women. Journal of Behavioral Medicine, Vol. 18 (4), pp. 377-384.

Kavga-Paltoglou (1990). Greece: Knowledge of breast self – examination. Nursing Times, Vol. 86 (37), pp. 57 (short report).

Kee, F (1992). Do general practitioners facilitate the Breast Screening Programme? European Journal for Cancer Prevention, Vol. 1 (3), pp. 231-238.

Kee, F; Telford, AM; Donaghy, P; O' Doherty, A (1992). Attitude or access: reasons for not attending mammography in Northern Ireland. European Journal of Cancer Prevention, Vol. 1 (4), pp. 311-5.

Kegeles, S (1985). Education for breast self- examination: why, who, what and how? Preventive Medicine, Vol. 14, pp. 702-720.

Keith, LG; Oleszczuk, JJ; Laguens, M (2002). Are mammography and palpation sufficient for breast cancer screening? A dissenting opinion. Journal of Women's Health and Gender Based Medicine, Vol. 11(1), pp. 17-25.

Kemeny, MM; Wellisch, DK; Schain, WS (1988). Psychosocial outcome in randomised surgical trial for treatment of primary breast cancer. Cancer, Vol. 62 (6), pp. 1231-1237.

Kenney, EM; Hovell, MF; Newborn, CR; Elder, JP (1989). Breast Self – Examination among College Women: Predictors for Cancer Control. American Journal of Preventive Medicine, Vol. 5 (1), pp. 27-33.

Kiebert, GM; de Haes, JC, van de Velde, CJ (1991). The impact of breast-conserving treatment and mastectomy on the quality - of – life of early-stage breast cancer patients: A review. Journal of Clinical Oncology, Vol. 9 (6), pp. 1059-1070.

Kihlstrom, JF; Eich, E; Sandbrand, D; Tobias, BA (2000). Emotion and memory: Implications for self – report, pp. 81-99. In Stone, AD; Turkkan, JS; Bachrach, CA; Jobe, JB; Kurtzman, HS; Cain, VS (Eds). The science of self – report: Implications for research and practice. Mahwah, NJ, USA: Lawrence Erlbaum Associates Publishers.

Kincaid, SB (1984). Breast reconstruction: A review. Annals of Plastic Surgery, Vol. 12 (5), pp. 431-448.

King, ES; Ross, E; Seay, J.; Balshem, A; Rimer, B (1995). Mammography Interventions for 65- to 74- Year- Old HMO Women. Journal of Aging and Health, Vol. 7 (4), pp. 529-551.

Knobf, MT (1986). Physical and psychologic distress associated with adjuvant chemotherapy in women with breast cancer. Journal of Clinical Oncology, Vol. 4 (5), pp. 678-684.

Koenig, HG and Cohen, HJ (Eds) (2002). The link between religion and health: Psychoneuroimmunology and the faith factor. London: Oxford University Press.

Koroishi, T; Tominaga, S; Ota, J; Horino, T; Taguchi, T; Ishida, T; Yokoe, T; Izuo, M; Ogita, M; Itoh, S et al. (1992). The effect of breast self- examination on early detection and survival. Japanese Journal of Cancer Research, Vol. 83, pp. 344- 350.

Krantz, DS and Hedges, SM (1987). Some cautions for research on personality and health. Journal of Personality, Vol. 55 (2), pp. 35-357.

Kreher, NE; Hickner, JM; Ruffin, MT and Lin CS (1995). Effect of Distance and Travel Time on Rural Women's Compliance with Screening Mammography: An UPRNet Study. The Journal of Family Practice, Vol. 40 (2), pp. 143-147.

Kreitler, S; Chaitchik, S; Kreitler, H (1990). The Psychological Profile of Women Attending Breast Screening Tests. Social Science and Medicine, Vol. 31(10), pp. 1177-1185.

Kreitler, S; Kovner, F; Inbar, M; Wigler, N; Lelchuck, S; Chaitnik, S; Kreitler, H (1992). Differences in quality of life between breast cancer patients who underwent mastectomy or lumpectomy. Paper presented at the first International Congress of Psycho-Oncology, Beaune, October.

Kreitler, S; Chaitnik, S; Kreitler, H; Weissler, K (1994). Who will Attend Tests for the Early Detection of Breast Cancer? Psychology and Health, Vol. 9 (6), pp. 463-483.

Kreitler, S; Kreitler, H; Chaitnik, S; Shaked, S; Shaked, T (1997). Psychological and Medical Predictors of Disease Course in Breast Cancer: A Prospective Study. European Journal of Personality, Vol. 11 (5), pp. 383-400.

Kristiansen, CM (1985). Value correlates of preventive health behavior. Journal of Personality and Social Psychology, Vol. 49, pp. 748-758.

Langer, LM and Tubman, JG (1997). Risky sexual behaviour among substance – abusing adolescents: Psychosocial and contextual factors. American Journal of Orthopsychiatry, Vol. 67 (2), pp. 315-322.

Lasry, JC; Margolese, R; Poisson, R; Shibata, H; Fleischer, D; Lafleur, D; Legault, S; Taillefer, S (1987). Depression and body image following mastectomy and lumpectomy. Journal of Chronic Disease, Vol. 40 (6), pp. 529-534.



Lau, RR (1982). The origins of health locus of control beliefs. Journal of Personality and Social Psychology, Vol. 42, pp. 322-334.

Lau, RR, Hartman, KA; Ware, JE (1986). Health As a Value: Methodological and Theoretical Considerations. Health Psychology, Vol. 5 (1), pp. 25-43.

Lauver D (1989). Instructional Information and Breast Self- Examination Practice. Research in Nursing and Health, Vol. 12, pp. 11-19.

Laville, EA; Vernon, SW; Jackson GL; Hughes JI (1989). Comparison of Participants and Nonparticipants in a Work Site Cancer Awareness and Screening Programme (1989). Journal of Occupational Medicine, Vol. 31 (3), pp. 221-232.

Lavrentiadis, G; Manos, N; Christakis, J; Semoglov, L (1988). The Greek patient's knowledge and attitudes towards his diagnosis and prognosis. Psychotherapy and Psychosomatics, Vol. 49, pp. 171-178.

Law, J (1991). Patient dose and risk in mammography. The British Journal of Radiology, Vol. 64 (760), pp. 360-365.

Law, J (1993). Variations in individual radiation dose in a breast screening programme and consequences for the balance between associated risk and benefit. The British Journal of Radiology, Vol. 66 (788), pp. 691-698.

Law, J (1995). Risk and benefit associated with radiation in breast screening programmes – an update. The British Journal of Radiology, Vol. 68 (812), pp. 870-876.

Law, J (1997). Cancers detected and induced in mammographic screening: new screening schedules and younger women with family. The British Journal of Radiology, Vol. 70, pp. 62-69.

Law, J (2001). Cancers detected and induced, and associated risk and benefit, in a breast screening programme. The British Journal of Radiology, Vol. 74, pp. 1121-1127.

Law, J and Faulkner, K (2002). Concerning the relationship between benefit and radiation risk and cancers detected and induced, in a breast screening programme. The British Journal of Radiology, Vol. 75 (896), pp. 678-684.

Leathar, DS and Roberts, MM (1985). Older Women's Attitudes Breast Disease, Self Examination, and Screening Facilities: Implications for Communication. British Medical Journal, Vol. 290 (2), pp. 668-70.

Lechner, L; de Vries, H; Offermans, N (1997). Participation in a Breast Cancer Screening Program: Influence of Past Behavior and Determinants on Future Screening Participation. Preventive Medicine: A International Journal Devoted to Practice and Therapy, Vol. 26 (4), pp. 473-482.

Lenz, ER (1984). Information seeking: A component of client decisions and health behavior. Advances in Nursing Science, pp. 59-73.

Lerman, C; Rimer, B; Blumberg, B; Cristinzio, S; Engstrom, PF; MacElwee, N; O'Connor, K; Sean, J (1990). Effects of coping style and relaxation on cancer chemotherapy side effects and emotional responses. Cancer Nursing, Vol. 13 (5), pp. 308-315.

Lerman, C; Rimer, B; Trock, B; Balslem, A; Engdtrom, PF (1990). Factors Associated with Repeat Adherence to Breast Cancer Screening. Preventive Medicine, Vol. 19 (3), pp. 279-290.

Lerman, C; Trock, B; Rimer, BK; Boyce, A; Jepson, C; Engstrom. PF (1991) Psychological and Behavioural Implications of Abnormal Mammograms. Annals of Internal Medicine, Vol. 114 (8), pp. 657-61.

Lerman, C; Daly, M; Walsh, WP; Resch, N; Seay, J; Barsevick, A; Birenbaum, L; Heggan, J; Martin, G (1993). Communication between patients with breast cancer and health care providers: determinants and implications. Cancer, Vol. 72 (9), pp. 2612-2620.

Lerman, C; Daly, M; Mansy, A; Balslem, A (1994). Attitudes about genetic testing for breast – ovarian cancer susceptibility. Journal of Clinical Oncology, Vol. 12, pp. 843-850.

Lerman, C; Narod, S; Schulman, K; Hughes, C; Gomez-Caminero, A; Bonney, G; Gold, K; Trock, B; Main, D; Lynch, H (1996b). BRCA1 testing in families with hereditary breast – ovarian cancer. A prospective study of patient decision making and outcomes. Journal of the American Medical Association, Vol. 275, pp. 1885-1892.

Levy, S; Herberman, R; Maluish, A; Schliew, B; Lippman, M (1985). Prognostic risk assessment in primary breast cancer by behavioral and immunological parameters. Health Psychology, Vol.4 (2), pp. 99-113.

Levy, S; Herberman, R; Lippman, M; d'Angelo, T (1987). Correlation of stress factors with sustained depression of natural killer activity and predicted prognosis in patients with breast cancer. Journal of Clinical Oncology, Vol. 5 (3), pp. 348-353.

Levy, SM and Wise, BD (1988). Psychosocial risk factors and cancer progression, pp. 77-96. In Cooper, CL, Stress and Breast Cancer (Ed), Oxford: John Wiley and Sons.

Lewis, CE; O' Brien, RM; Barraclough, J (Eds) (2002). The Psychoimmunology of Cancer, 2<sup>nd</sup> Edition, Oxford University Press.

Lewis, FM and Bloom, JR (1978-1979). Psychosocial adjustment to breast cancer: A review of selected literature. International Journal of Psychiatry, Vol. 9 (1), pp. 1-17.

Lewis, FM (1986). The impact of cancer on the family: A critical analysis of the research literature. Patient Education and Counselling, Vol. 8 (3), pp. 269-289.

Ley, P (1982). Satisfaction, compliance, and communication. British Journal of Clinical Psychology, Vol. 21, pp. 241- 254.

Ley, P (1990). Communication with Patients: Improving Communication, Satisfaction and Compliance. London: Chapman and Hall.

Lichtman, RR; Taylor, SE; Wood, JV; Bluming, AZ; Dosik, GM; Leibowitz, RL (1984). Relations with children after breast cancer: The mother-daughter relationship at risk. Journal of Psychosocial Oncology, Vol. 2 (3/4), pp. 1-19.

Lindsey, AM; Norbeck, JS; Carrieri, VL; Perry, E (1981). Social support and health outcomes in postmastectomy women: A review. Cancer Nursing, Vol. 4 (5), pp. 377-384.

Lippman, M (1988). Steroid hormone receptors and mechanisms of growth regulation of human breast cancer. In Lippman, A, Lichter, A and Danforth, D (Eds), Diagnosis and Management of Breast Cancer, Philadelphia: Saunders.

Loo, R (2000). A psychometric evaluation of the General Decision Making Style Inventory. Personality and Individual Differences, Vol. 29 (5), pp. 895-905.

Love, RR; Wolter, RL; Hoopes, PA (1985). Breast cancer-related inquiries by patients to a telephone information service. Cancer, Vol. 56, pp. 2733-2735.

Love, RR; Leventhal, H; Evasterling, DV; Nerenz, DR (1989). Side effects and emotional distress during cancer chemotherapy. Cancer, Vol. 63, pp. 604-612.

Luckman, J and Soresen, LR (1987). Medical-Surgical Nursing: A Psychophysiologic Approach, 3<sup>rd</sup> edition, Philadelphia: Saunders.

Ludbrook, J (1991). On making multiple comparisons in clinical and experimental pharmacology and physiology (Editorial Review). Clinical and Experimental Pharmacology and Physiology, Vol. 18, pp. 379-392.

Ludbrook, J (2001). Statistics in Physiology and Pharmacology: A slow and erratic learning curve (PPS Symposium). Clinical and Experimental Pharmacology and Physiology, Vol. 28, pp. 488-492.

Ludwick – Rosenthal, R; Neufeld, RJ. (1993). Preparation for undergoing an invasive medical procedure: interacting effects of information and coping style. Journal of Consulting Clinical Psychology, Vol. 61, pp. 156-164.

Lynch, JW; Kaplan, GA; Salonen, JT (1997). Why do poor people behave poorly? Variation in adult behaviours and psychosocial characteristics by stages of the socioeconomic lifecourse. Social Science and Medicine, Vol. 44 (6), pp. 809-819.

MacHardy, L and Rae, L (1991). Breast Screening and the Primary Health Care Team. Edinburgh: South East of Scotland Breast Screening Centre and Borders Health Board.

Maclea, U; Sinfield, D; Klein, S; Harnden, B (1984). Women who declined breast screening. Journal of Epidemiology and Community Health, Vol. 38 (4), pp. 278-283.

Maddux, JE and Rogers, RW (1983). Protection motivation and self- efficacy: A revised theory of fear appeals and attitude change. Journal of Experimental Social Psychology, Vol. 19, pp. 469-479.

Magarey, CJ, Todd, PB; Blizard, PJ (1977). Psychological factors influencing delay and breast self- examination in women with symptoms of breast cancer. Social Science and Medicine, Vol. 11, pp. 229-232.

Maguire, P (1975). The psychological and social consequences of breast cancer. Nursing Mirror, Vol. 140 (14), pp. 54-57.

Maguire, GP; Lee, EG; Bevington, DJ; Kuchemann, CS; Crabtree, RJ; Cornell, CE (1978). Psychiatric problems in the first year after mastectomy. British Medical Journal, Vol. 1 (6118), pp. 963-965.

Maguire, GP (1983). Possible psychiatric complications of screening for breast cancer. The British Journal of Radiology, Vol. 56, pp.284.

Maguire, RP and Rutter, DR (1986). Consultation skills of young doctors: I. Benefits of feedback training in interviewing as students persist. British Medical Journal, Vol. 292, pp. 1537-1538.

Maiman, LA and Becker, MH (1974). The Health Belief Model: Origins and Correlates in Psychological Theory. Health Education Monographs, Vol. 2, pp. 1-8.

Malec, J; Wolberg, W; Romsaas, E; Trump, D; Tanner, M (1988). Millon Clinical Multiaxial Inventory (MCMI) findings among breast clinic patients after initial evaluation and at 4 – or 8 – month follow – up. Journal of Clinical Psychology, Vol. 44 (2), pp. 175-180.

Mamon, J and Zapka, J (1986). Breast self – examination by young women: 1. Characteristics associated with frequency. American Journal of Preventive Medicine, Vol. 2, pp. 61-68.

Manfredi, C; Warnecke, RB; Graham, S; Rosenthal, S (1977). Social Psychological Correlates of Health Behavior: Knowledge of Breast Self- Examination Techniques among Black Women. Social Science and Medicine, Vol. 11, pp. 433-440.

Mann, L (1982). Flinders Decision Making Questionnaire II, unpublished questionnaire, The Flinders University of South Australia.

Mann, L; Beswick, G; Allouache, P; Ivey, M (1989). Decision workshops for the improvement of decision making skills and confidence. Journal of Counselling and Development, Vol. 67, pp. 478-81.



Mann, L; Burnett, P; Radford, M; Ford, S (1997). The Melbourne Decision Making Questionnaire: An Instrument for Measuring Patterns for Coping with Decisional Conflict. Journal of Behavioral Decision Making, Vol. 10, pp. 1-19.

Mann, L; Radford, M; Burnett, P; Ford, S; Bond, M; Leung, K; Nakamura, H; Vaughan, G; Yang, K (1998). Cross – cultural differences in self – reported decision making style and confidence. International Journal of Psychology, Vol. 33 (5), pp. 325-335.

Manos, N and Christakis, J (1980-1981). Attitudes of cancer specialists toward their patients in Greece. International Journal of Psychiatry and Medicine, Vol. 10 (4), pp. 305-313.

Margolis, GJ and Goodman, RL (1983). Psychological adjustment in the mastectomy patient. In DJ Higby (Ed), Supportive care in the cancer therapy, pp. 239-280, Boston: Martinus Nijhoff Publishers.

Margolis, GJ; Goodman, RL; Rubin, A; Pajac, TF (1989). Psychological factors in the choice of treatment for breast cancer. Psychosomatics: Journal of Consultations Liaison Psychiatry, Vol. 30 (2), pp. 192-197.

Margolis, GJ; Goodman, RL; Rubin, A (1990). Psychological effects of breast conserving cancer treatment and mastectomy. Psychosomatics: Journal of Consultation Liaison Psychiatry, Vol. 31 (1), pp. 33-39.

Markel, WM (1971). The American Cancer Society's Program for Rehabilitation of the Breast Cancer Patient. Cancer, Vol. 28 (6), pp. 1676-1678.

Marshall, AA; Smith SW; McKeon, JK (1995). Persuading Low- Income Women to Engage in Mammography Screening: Source, Message, and Channel Preferences. Health Communication, Vol. 7 (4), pp. 283-299.

Marshall, JR and Funch, DP (1983). Social environment and breast cancer: A cohort analysis of patient survival. Cancer, Vol. 52 (8), pp. 1546-1550.

Marteau, TM (1989). Psychological Costs of Screening. British Medical Journal, Vol. 299, pp. 527.

Marteau, TM (1990). Screening in Practice: Reducing the Psychological Costs. British Medical Journal, Vol. 301 (6742), pp. 26-28.

Martinez, MP (2002). Acculturation, coping style and decision making about genetic testing in Hispanic women at risk for breast and ovarian cancer. Dissertation Abstracts International: Section: B: The Sciences and Engineering, Vol. 63 (1-B), page 560.

Massey, V (1986). Perceived Susceptibility to Breast Cancer and Practice Of Breast Self – Examination. Nursing Research, Vol. 35 (3), pp. 183-185.

Masur, FT (1981). Adherence to health care regimens. In Prokop, CK and Bradley, LA (Eds.) Medical Psychology: Contributions to behavioral medicine (pp. 441- 470). New York: Academic Press.

Matthews, G and Deary, IJ (1998). Personality traits. Cambridge: Cambridge University Press.

Mattsson, A; Leitz, W; Rutqvist, LE (2000). Radiation risk and mammographic screening of women from 40 to 49 years of age: effect on breast cancer rates and years of life. British Journal of Cancer, Vol. 82 (1), PP. 220-226.

McCaul, KD; Reid, PA; Rathge, RW; Martinson, B (1996). Does Concern About Breast Cancer Inhibit or Promote Breast Cancer Screening? Basic and Applied Social Psychology, Vol. 18 (2), pp. 183-194.

McCaul, KD; Sandgren, AK; King, B; O' Donnell, S; Branstetter, A; Foreman, G (1999). Coping and adjustment to breast cancer. Psychooncology, Vol. 8 (3), pp. 230-236.

McEwan, J; King, E; Bickler, G (1989). Attendance and non-attendance at the south - east London breast screening service. British Medical Journal, Vol. 299, pp. 104-106.

McGarvey, EL; Baum, LD; Pinkerton, RC; Rogers, LM (2001). Psychological sequelae and alopecia among women with cancer. Cancer Practice, Vol. 9 (6), pp. 283-289.

McKinlay, JB (1975). Who is really ignorant- physician or patient? Journal of Health and Social Behavior, Vol. 16, pp. 3-11.

McWorter, WP; Schatzkin, AG; Horm, JW; Brown, CC (1989). Contribution of socio-economic status to black / white differences in cancer incidence. Cancer, Vol. 63 (5), pp. 982-987.

Meischke, H and Johnson, JD (1995), Women's selection of sources of information on breast cancer detection. Health Values, Vol. 19 (5), pp. 30-38.

Meiser, B; Butow, P; Barratt, A; Friedlander, M; Kirk, J; Gaff, C; Haan, E; Aittomaki, K; Tucker, AM (2000). Breast cancer screening uptake in women at increased risk of developing hereditary breast cancer. Breast Cancer Research and Treatment, Vol. 59 (2), pp. 101-111.

Meissner, HI; Potosky, AL; Convissor, R (1992). How Sources of Health Information relate to Knowledge and Use of Cancer Screening Exams. Journal of Community Health, Vol. 17 (3), pp. 153-165.

Mentes, J; Culp, K; Maas, M; Rantz, M (1999). Acute Confusion Indicators: Risk Factors and Prevalence Using MDS Data. Research in Nursing and Health, Vol. 22 (2), pp. 95-105.

Mesko, TW; Dunlap, JN; Sutherland, CM (1990). Risk factors for breast cancer. Comprehensive Therapy, Vol. 16 (11), pp. 3-9.

Mettlin, C (1992). Breast cancer risk factors- contributions to planning breast cancer control. Cancer, Vol. 69 (7 Suppl), pp. 1904-1910.

Mettlin, CJ and Smart, CR (1993). The Canadian National Breast Screening Study. An appraisal and implications for early detection policy. Cancer, Aug 15, Vol. 72 (4 Suppl), pp. 1461-1465.

Mettlin, C (1999). Global Breast Cancer Mortality Statistics. CA – A Cancer Journal for Clinicians, Vol. 49, pp. 138-144.

Metze, E (1978). Couples and mastectomy. In Brand, PC and van Keep, PA (Eds.), Breast cancer: Psychosocial aspects of early detection and treatment, Baltimore, MD: University Park Press.

Meyerowitz, BE (1980). Psychosocial correlates of breast cancer and its treatment. Psychological Bulletin, Vol. 87 (1), pp. 108-131.

Meyerowitz, BE; Watkins, IK; Sparks, FC; (1983). Psychosocial implications of adjuvant chemotherapy: A two-year follow-up. Cancer, Vol. 52 (8), pp. 1541-1545.

Meyerowitz, BE and Chaiken, S (1987). The Effect of Message Framing on Breast Self – Examination Attitudes, Intentions, and Behavior. Journal of Personality and Social Psychology, Vol. 52 (3), pp. 500-510.

Michie, S; Rosebert, J; Heaversedge, J; Madden, S; Parbhoo, S (1996). The Effects of Different Kinds of Information on Women Attending an Out- Patient Breast Clinic. Psychology, Health and Medicine, Vol. 1 (3), pp. 285- 296.

Millar, MG and Tesser, A (1986). Effects of affective and cognitive focus on the attitude- behavior relation. Journal of Personality and Social Psychology, Vol. 51, pp. 270-276.

Millar, MG and Millar, K (1992). Feelings and beliefs about breast cancer and breast self- examination among women in three age groups. Family and Community Health, Vol. 15 (3), pp. 30-37.

Millar, MG (1997). The Effects of Emotion on Breast Self - Examination: Another Look at the Health Belief Model. Social Behavior and Personality, Vol. 25 (3), pp. 223-232.

Miller, SM and Mangan, CE (1983). The interacting effects of information and coping style in adapting to gynecologic stress: Should the doctor tell all. Journal of Personality and Social Psychology, Vol. 45, pp. 223-236.

Miller, SM (1987). Monitoring and blunting: Validation of a questionnaire to assess styles of information seeking under threat. Journal of Personality and Social Psychology, Vol. 52, pp. 345-353.

Miller, S; Brody, D; Summerton, J (1988). Styles of coping with threat: Implications for health. Journal of Personality and Social Psychology, Vol. 54 (1), pp. 142-148.

Miller, AB; Baines, CJ; To, T; Wall, C (1992). Canadian National Breast Screening Study: 1. Breast cancer detection and death rates among women aged 40 to 49 years. Canadian Medical Association Journal, Vol.147 (10), pp. 1459-1476.

Miller, AB; Baines, CJ; To, T; Wall, C (1992). Canadian National Breast Screening Study: 2. Breast cancer detection and death rates among women aged 50 to 59 years. Canadian Medical Association Journal, Vol. 147 (10), pp. 1477-1488.

Miller, AB; Baines, CJ; To, T; Wall, C. (1992). Canadian National Breast Screening Study. Canadian Medical Association Journal, Vol. 147, pp. 1459-1488.

Miller, S; Roussi, P; Altman, D; Helm, W; Steinberg, A (1994). The effects of coping style on psychological reactions to colposcopy among low – income minority women. Journal of Reproductive Medicine, Vol. 39, pp. 711-718.

Miller, S (1995). Monitoring versus Blunting Styles of Coping with Cancer Influence the Information Patients Want and Need about their Disease: Implications for Cancer Screening and Management. Cancer, Vol. 76 (2), pp. 167-177.

Miller, SM; Shoda, Y; Hurley, K (1996b). Applying cognitive-social theory to health protective behavior: Breast self – examination in cancer screening. Psychological Bulletin, Vol. 119, pp. 70-94.

- Mitchell, GW and Glicksman, AS (1977). Cancer Patients: Knowledge and Attitudes. Cancer, Vol. 40, pp. 61-66.
- Mitchell, H (1987). Organized Mammographic Screening Programmes. A Benign or Malignant Neglect? Med J Aust, Vol. 146, pp. 87-90.
- Mock, V (1993). Body Image in Women Treated For Breast Cancer. Nursing Research, Vol. 42 (3), pp. 153-157.
- Morris, J and Royle, GT (1988). Offering patients a choice of surgery for early breast cancer: A reduction in anxiety and depression in patients and their husbands. Social Science and Medicine, Vol. 26 (6), pp. 583-585.
- Morris, T; Greer, HS; White, P (1977). Psychological and social adjustment to mastectomy: A two-year follow-up. Cancer, Vol. 77, pp. 2381-2387.
- Morris, T and Greer, S (1982). Psychological Characteristics of Women Electing to Attend a Breast Screening Clinic. Clinical Oncology, Vol. 8 (2), pp. 113-119.
- Mosconi, P; Meyerowitz, BE; Liberati, MC; Liberati, A (1991). Disclosure of breast cancer diagnosis: patient and physician reports. GIVIO (Interdisciplinary Group for Cancer Care Evaluation, Italy). Annals in Oncology, Vol. 2 (4), pp. 273-280.



Moss, SM; Ellman, R; Coleman, D; Chamberlain, J (1994). Survival of patients with breast cancer diagnosed in the United Kingdom trial of early detection of breast cancer. United Kingdom Trial of Early detection of Breast cancer Group. Journal of Medical Screening, Vol. 1 (3), pp. 193-198.

Mousiama, T; Loakimidou, S; Largatzi, E; Kaitelidou, D; Liaropoulos, L (2001). Health technology assessment in the area of prevention: selected screening cases in Greece. International Journal of Technology Assessment in Health Care, Vol. 17 (3), pp. 338-357.

Moyer, A; Greener, S; Beauvais, J; Salovey, P (1995). Accuracy of Health Research Reported in the Popular Press: Breast Cancer and Mammography. Health Communication, Vol. 7 (2), pp. 147-161.

Moyer, AE (1999). Quality of life following treatment for breast cancer: Breast – conserving surgery versus mastectomy. Dissertation Abstracts International - Section B: The Sciences and Engineering, Vol. 59(11B): 5799.

Munroe, AJ; Biruls, R; Griffin, AV; Thomas, H; Vallis, KA (1989). Distress associated with radiotherapy for malignant disease: A quantitative analysis based on patients' perceptions. British Journal of Cancer, Vol. 60, pp. 370-374.

Murray, M and McMillan, C (1993). Health beliefs, locus of control, emotional control and women's cancer screening. British Journal of Clinical Psychology, Vol. 32, pp. 87-100.

Murray, B (1998). Vertical-strips method for breast self-exam uses "touch intelligence" - A psychologist's behavioral insight. Leads to a better way of finding breast lumps. APA Monitor, Vol. 29 (12), December, American Psychological Association.

Mystakidou, K; Liossi, C; Vlachos, L; Papadimitriou, J (1996). Disclosure of diagnostic information to cancer patients in Greece. Palliative Medicine, Vol. 10 (3), pp. 195-200.

Nail, LM and King, KB (1987). Symptom distress: Fatigue. Seminars in Oncology Nursing, Vol. 3 (4), pp. 257-262.

Nasseri, K; Bastani, R; Bernstein, S; Breslow, L (1994). Hospital information system and patterns of cancer screening. Journal of Medical Systems, Vol. 18 (6), pp. 335-342.

National Women's Health Report (1992), The National Women's Health Resource Center, New York.

Nemcek, MA (1990). Health Beliefs and Breast Self- Examination Among Black Women. Health Values, Vol. 14 (5), pp. 41-52.

Norman, P and Bennett, P (1996). Health Locus of Control. In Conner, M. and Norman, P. Predicting Health Behaviour, Buckingham: Open University Press.

Northouse, LL and Swain, MA (1987). Adjustment of patients and husbands to the initial impact of breast cancer. Nursing Research, Vol. 36 (4), pp. 221-225.

Northouse, LL (1988). Social support in patients' and husbands' adjustment to breast cancer. Nursing Research, Vol. 37 (2), pp. 91-95.

Northup, KM; Brownson, RC; Hagan, RA; Wilkerson, JC; Nelson, GS (1993). Utilization of Mammography by Missouri Women. Missouri Medicine, Vol. 90, pp. 173-176.

Nystrom, L; Rutvist, LE; Stig, W (1993). Breast cancer screening with mammography: an overview of Swedish randomised trials. Lancet, Vol. 341, pp. 973-978.

Olapedo, O and Adegoke, F (1997). Breast Self – Examination in Tertiary Institutions in a Nigerian City. International Quarterly of Community Health Education, Vol. 16 (2), pp. 175-185.

Olin, JJ (2001). Cognitive function after systemic therapy for breast cancer. Oncology (Huntingt), Vol. 15 (5), Discussion 618, pp. 621-624.

Omne-Ponten, M; Holmberg, L; Sjoden, PO (1994). Psychological adjustment among women with breast cancer stage I and II: Six - year follow-up of consecutive patients. Journal of Clinical Oncology, Vol. 12 (9), pp. 1778-1782.

Orr, E (1986). Open communication as an effective stress management method for breast cancer. Journal of Human Stress, Vol. 12 (4), pp. 175-185.

Osteen, RT; Henderson, C; Costanza, ME; Wood, WC; Harris, JR (1986). Cancer of the breast. In Cady, B (Ed), Cancer Manual, 7<sup>th</sup> edition, Boston, MA: American Cancer Society.

Ottensbacher, KJ (1988). Scientific vs. Statistical Inference: The Problem of Multiple Contrasts in Clinical Research. American Journal of medical Sciences, Vol. 295 (3), pp. 172-177.

Owens, RG; Daly, J; Heron, K; Leinster, SJ (1987). Psychological and Social Characteristics of Attenders for Breast Screening. Psychology and Health, Vol. 1 (4), pp. 303-313.

Pajak, TF; Clark, GM; Sargent, DJ; McShane, LM; Hammomd, EH (2000). Statistical Issues in Tumor Marker Studies. Archives of Pathology and Laboratory Medicine, Vol. 124, pp. 1011-1015.

Panoussopoulos, D; Chang, J; Humphrey, LJ (1977). Screening for breast cancer. Annals of Surgery, Vol. 186 (3), pp. 356-362.

Paraskevaïdis, E; Kitchener, HC; Walker, LG (1993). Doctor – patient communication and subsequent mental health in women with gynaecological cancer. Psycho-Oncology, Vol. 2, pp. 195-200.

Paschal, S and Charles, P (1996). The health belief model. In Conner and Norman (Eds.). Predicting Health Behaviour: Research and Practice with social cognition models (1996), Buckingham: The Open University.

Pater, JL; Zee, B; Palmer, M; Johnston, D; Osoba, D (1997). Fatigue in patients with cancer: results with National Cancer Institute of Canada Clinical Trials studies employing the EORTC QOL-C30. Support Care Cancer, Vol. 5 (5), pp. 410-413.

Patistea, E; Chliaoutakis, J; Darvini, C; Tselika, A (1992). Breast self – examination. Knowledge and behavior of Greek female health care professionals working in primary health care centers. Cancer Nursing, Vol.15 (6), pp. 415-421.

Pennman, DT; Holland, JC; Bahna GF; Morrow, G; Schmale, AH; Derogatis, LR; Carnike CL; Cherry, R (1984). Informed consent for investigational chemotherapy: Patients' and physicians' perceptions. Journal of Clinical Oncology, Vol. 2, pp. 849—855.

Pennman, DT; Bloom, JR; Fotopoulos, S; Cook, MR; Holland, JC; Gates, C; Flamer, D; Murawski, B; Ross, R; Brandt, U; Muenz, LR; Pee, D; Phil, M (1986). The Impact of Mastectomy on Self - Concept and Social Function: A Combined Cross – Sectional and Longitudinal Study With Comparison Groups. Women and Health, Vol. 11 (3-4), pp. 101-130.

Pennman, DT; Bloom, JR; Fotopoulos, S (1987). The impact of mastectomy on self – concept, and social function: a combined cross – sectional and longitudinal study with comparison groups. In S. Stellman (Ed) Women and Cancer, New York: The Haworth Press INC.

Peragallo, NP; Fox, PG; Alba, ML (1998). Breast care among Latino immigrant women in the U.S. Health Care for Women International, Vol. 19 (2), pp. 165-172.

Peters-Golden, H (1982). Breast cancer: Varied perceptions of social support in the illness experience. Social Science and Medicine, Vol. 16 (4), pp. 483-491.

Pettingale, KW; Philalithis, A; Tee, DE; Greer, HS (1981). The biological correlates of psychological responses to breast cancer. Journal of Psychosomatic Research, Vol. 25 (5), pp. 453-458.

Pettingale, KW (1984). Coping and cancer prognosis. Journal of Psychosomatic Research, Vol. 28 (5), pp. 363-364.

Pettingale, KW; Morris, T; Greer, S; Haybittle, JL (1985). Mental attitudes to cancer: an additional prognostic factor. Lancet, Vol. 1 (8431), pp. 750.

Phillips, KA and Bernhard, J (2003). Adjuvant breast cancer treatment and cognitive function: current knowledge and research directions. Journal of the National Cancer Institute, Vol. 95 (3), pp. 190-197.

Pitts, M; McMaster, J; Wilson, P (1991). An Investigation of Preconditions necessary for the Introduction of a Campaign to Promote Breast Self – Examination amongst Zimbabwean Women. Journal of Community and Applied Social Psychology, Vol. 1, pp. 33-41.

Polivy, J (1977). Psychological effects on a woman's feminine self – concept. Journal of Nervous and Mental Disease, Vol. 164 (2), pp. 77-87.

Pratt, L; Seligmann, A; Reader, G (1957). Physician Views on the level of Medical Information among Patients. American Journal of Public Health, Vol. 47, pp. 1277.

Price, J (1994). Economically Disadvantaged Females' Perceptions of Breast Cancer Screening. Journal of the National Medical Association, Vol. 86 (12), pp. 899-906.

Primomo, J; Yates, BC; Woods, NF (1990). Social support for women during chronic illness: The relationship among sources and types of adjustment. Research in Nursing and Health, Vol. 13, pp. 153-161.

Pronzato, P; Bertelli, G; Losardo, P; Landucci, M (1994). What do advanced cancer patients know of their disease? A report from Italy. Support Care Cancer, Vol. 2 (4), pp. 242-244.

Pyszczynski, TA and Greenberg, J (1981). Role of disconfirmed expectancies in the instigation of attributional processing. Journal of Personal and Social Psychology, Vol. 40, pp. 31-38.

Queirolo, O; Repetto, L; Gardin, G; Migliette, L; Guido, T; Pronzato, P; Rosso, R (1991). Intensive chemotherapy with cisplatin, mitoxantrone, methotrexate and vincristine in metastatic breast cancer. Journal of Chemotherapy, Vol. 3 (3), pp. 194-197.

Rakowski, W; Dube, CE; Marcus, BH; Prochaska, JO; Velicer, WF; Abrams, DB (1992). Assessing Elements of Women's Decisions About Mammography. Health Psychology, Vol. 11 (2), pp. 111-118.

Rakowski, W; Dube, CE; Marcus, BH; Prochaska, JO; Velicher, WF; Abrams, DB (1992). Assessing elements of women's decisions about mammography. Health Psychology, Vol. 11 (2), pp. 111-118.

Ramirez, AJ; Graham, J; Richards, MA; Cull, A; Gregory, WM; Leani, MS; Snashall, DC; Timothy, AR (1995). Burnout and psychiatric disorder among cancer clinicians. British Journal of Cancer, Vol. 71 (6), pp. 1263-1269.

Rapoport, Y; Kreitler, G; Chaitchik, S; Algor, R; Weissler, K (1993). Psychosocial problems in head-and-neck cancer patients and their change with time since diagnosis. Annals of Oncology, Vol. 4, pp. 69-73.

Ratcliffe, MA; Dawson, AA; Walker, LG (1995). Eysenck Personality Inventory L-scores in patients with Hodgkin's disease and non-Hodgkin's lymphoma. Psycho-Oncology, Vol. 4, pp. 39-45.



Rauscher, GH; O' Malley, MS; Earp, JA (2002). How consistently do women report lifetime mammograms at successive interviews? American Journal of Preventive Medicine, Vol. 22 (1), pp. 8-14.

Ray, C (1977). Psychological implications of mastectomy. British Journal of Social and Clinical Psychology, Vol. 16 (4), pp. 373-377.

Ray, C (1978). Adjustment to mastectomy. In PC Brand and PA van Keep (Eds), Breast cancer: Psychological aspects of early detection and treatment, University Park Press, Baltimore.

Ray, C and Baum, M (1985). Psychological Aspects of Early Breast Cancer, New York: Springer - Verlag.

Reaby, LL and Hort, L (1995). Postmastectomy Attitudes in Women Who Wear External Protheses Compared to Those Who Have Undergone Breast Reconstructions. Journal of Behavioral Medicine, Vol. 18 (1), pp. 55-67.

Reisch, LM; Fosse, JS; Beverly, K; Yu, O; Barlow, WE; Harris, EL; Rolnick, S; Barton, MB; Geiger, AM; Herrinton, LJ; Greene, SM; Fletcher, SW; Elmore, JG (2003). Training, quality assurance and assessment of medical record abstraction in a multisite study. American Journal of Epidemiology, Vol. 157 (6), pp. 546-551.

Richards, MA; Ramirez, AJ; Degner, LF; Fallowfield, LJ; Maher, EJ; Neuberger, J (1995). European Journal of Cancer, Vol. 31A (1), pp. 112-116.

Rimer, BK; Davis, SW; Engstrom, PF; Myers, RE (1988). Some reasons for compliance and noncompliance in a Health Maintenance Organisation Breast Cancer Screening Program. The Journal of Compliance in Health Care, Vol. 3 (2), pp. 103-114.

Rimer, BK; Ross, E; Cristinzio, CS; King, E (1989). Older Women's Participation in Breast Screening. Journal of Gerontology, Vol. 47 (Special Issue), pp. 85-91.

Rimer, BK; Kreintz, MK; Kessler, HB; Engstrom, PF; Rosan, J (1989). Why women resist screening mammography: Patient-related barriers. Radiology, Vol. 172 (1), pp. 243-246.

Rimer, BK (1992). Understanding the Acceptance of Mammography by Women. Annals of Behavioral Medicine, Vol. 14 (3), pp. 197-203.

Rimer, BK (1994). Interventions to increase breast screening: lifespan and ethnicity issues. Cancer Supplement, Vol. 74, pp. 323-328.

Robbins, GF (1971). Rehabilitation of the breast cancer patient: Introducing remarks. Cancer, Vol. 28, pp. 1659.

Robbins, GF (1973). Nursing Management of patients with breast tumors. In HD Behnke (Ed), Guidelines for comprehensive nursing care in cancer, New York: Springer.

Roberts, MM; French, K; Duffy, J (1984). Breast Cancer and Breast Self – Examination: What Do Scottish Women Know? Social Science and Medicine, Vol. 18 (9), pp. 791-797.

Roberts, MM; Alexander, FE; Anderson, TJ; Chetty, V; Donnan, PT; Forest, P; Hebburn, W; Higgins, A; Kirkpatrick, AE; Lamb, J (1990). Edinburgh trial of screening for breast cancer: mortality at seven years. Lancet, Vol. 335 (8684), pp. 241-246.

Rodriguez, C; Plasencia, A; Schroeder, DG (1995). Predictive Factors of Enrollment and Adherence in a Breast Cancer Screening Program in Barcelona (Spain). Social Science and Medicine, Vol. 40 (8), pp. 1155-1160.

Rojas, M; Mandelblatt, J; Cagney, K; Kerner, J; Freeman, H (1996). Barriers to follow-up of abnormal screening mammograms among low-income minority women. Ethnicity and Health, Vol. 1 (3), pp. 221-228.

Ronis, DL and Harel, Y (1989). Health beliefs and breast examination behaviors: analyses of linear structural relations. Psychology and Health, Vol. 3, pp. 259- 285.

Ronis, DL and Kaiser, MK (1989). Correlates of Breast Self - Examination in a Sample of College Women: Analyses of Linear Structural Relations. Journal of Applied Social Psychology, Vol. 19 (13), pp. 1068-1084.

Rothman, AJ; Salovey, P; Turvey, C; Fishkin, SA (1993). Attributions of Responsibility and Persuasion: Increasing Mammography Utilization Among Women Over 40 With an Internally Oriented Message. Health Psychology, Vol. 12 (1), pp. 39-47.

Rotter, RB (1966). Generalized expectancies for internal and external control of reinforcement. Psychological Monographs: General and Applied, Vol. 80 (1), pp. 1-28.

Rowland, JH and Holland, JC (1989). Breast Cancer. In Holland, JC and Rowland, JH (Eds), Psychooncology: Psychological Care of the Patient with Cancer, New York: Oxford University Press.

Royak-Schaler, R and Feldman, RHL (1988). Health education in the psychotherapy setting: The mind-body connection, pp. 75-90. In JH Humphrey (Ed), Advances in health education: Current research Vol. 1, New York: AMS Press.

Royak-Schaler, R (1991). Psychological Processes in Breast Cancer: A Review of Selected Research. Journal of Psychosocial Oncology, Vol. 9 (4), pp. 71-89.

Rubino, C; de Vathaire, F; Diallo, I; Shamsaldin, A; Grimaud, E; Labb, M; Contesso, G; Le, M (2002). Radiation dose, chemotherapy and risk of lung cancer after breast cancer treatment. Breast Cancer Research and Treatment, Vol. 75 (1), pp. 15-24.

Ruda, PA; Bourcier, FM; Skiff, D (1992). Health Beliefs of senior college students regarding breast cancer and breast self- examination. Health Care for Women International, Vol. 13 (1), pp.33-41.

Rutledge, DH (1987). Factors related to women's practice of breast self - examination. Nursing Research, Vol. 36 (2), pp. 117-121.

Rutledge, DN; Hartman, WH; Kinman, PO; Winfield, AC (1988). Exploration of Factors Affecting Mammography Behaviors. Preventive Medicine, Vol. 17 (4), pp. 412-422.

Sackmary, B (1989). Attitudes and Behaviour about Cancer and its Prevention- A Survey of Adults in Connecticut Department of Health Services, Center for Chronic Disease and Urban / Rural Health.

Sadler, IJ and Jacobsen, PB (2001). Progress in understanding fatigue associated with breast cancer treatment. Cancer Investigations, Vol. 19 (7), pp. 723-731.

Salazar, MK (1994). Breast self - examination beliefs: A descriptive study. Public Health Nursing, Vol. 11 (1), pp. 49-56.

Salazar, MK and Carter, W (1994). A Qualitative Description of Breast Self - Examination Beliefs. Health Education Research: Theory and Practice, Vol. 9 (3), pp. 343-354.

Salazar, MK and de Moor, C (1995). An evaluation of Mammography Beliefs Using a Decision Model. Health Education Quarterly, Vol. 22 (1), pp. 110-126.

Schag, C; Ganz, P; Heinrich, R (1991). Cancer Rehabilitation Evaluation System – short form (CARES-SF): a cancer specific rehabilitation and quality of life instrument. Cancer, Vol. 68, pp. 1406-1413.

Schagen, SB; van Dam, FS; Muller, MJ; Boogerd, W; Lindeboom, J; Bruning, PF (1999). Cognitive deficits after postoperative adjuvant chemotherapy for breast carcinoma. Cancer, Vol. 85 (3), pp. 640-650.

Schain, W (1976). Psychosocial issues in counselling mastectomy patients. Counselling Psychologist, Vol. 6 (2), pp. 45-49.

Schain, WS; Wellisch, DK; Pasnau, R; Landsverk, J (1985). The sooner the better: A study of psychological factors in women undergoing immediate versus delayed breast reconstruction. American Journal of Psychiatry, Vol. 142 (1), pp. 40-46.

Schain, WS (1988). The sexual and intimate consequences of breast cancer treatment. CA Cancer Journal of Clinicians, Vol. 38 (3), pp. 154-161.

Schapira, DV; Kumar, NB; Clark, RA; Yang, C (1992). Mammography screening credit card and compliance. Cancer, Vol. 70, pp. 509.

Schlotter, CM; Vogt, U; Bosse, U; Mrsch, B; Wasmann, K (2003). C-myc, not HER-2/neu, can predict recurrence and mortality of patients with node-negative breast cancer. Breast Cancer Research, Vol. 5 (2), pp. 30-36.

Schlueter, LA (1982). Knowledge and Beliefs about Breast Cancer and Breast Self-Examination Among Athletic and Nonathletic Women. Nursing Research, Vol. 31 (6), pp. 348-353.

Schottenfeld, D and Robbins, GF (1970). Quality of survival among patients who have had radical mastectomy. Cancer, Vol. 26 (3), pp. 650-654.

Schramm, WS (1973). Men, Messages, and Media. New York: Harper and Row.

Schwarzer, R (1992). Self-efficacy in the adoption and maintenance of health behaviors: Theoretical approaches and a new model. In Schwarzer, R (Ed) Self-efficacy: Thought control of action, London: Hemisphere.

Scott, DW and Eisendrath, SJ (1985-1986). Dynamics of the recovery process following initial diagnosis of breast cancer. Journal of Psychosocial Oncology, Win, Vol. 3 (4), pp. 53-66.

Scott, D; Barber, JB; Levine, EL; Burrill, W; Roberts, SA (1998). Radiation – induced micronucleus induction in lymphocytes identifies a high frequency of radiosensitive cases among breast cancer patients: a test for predisposition? British Journal of Cancer, Vol. 77 (4), pp. 614-620.

Seidman, H; Silveberg, E et al. (1987) Survival Experience in Breast Cancer Detection Project. CA: Cancer Journal for Clinicians, Vol. 32 (5), pp. 258-90.

Semiglazov, VF; Moiseyenko, VM; Bavli, JL; Migmanova, NS; Seleznoyov, NK; Popova, RT et al. (1992). The role of breast self – examination in early breast cancer detection (results of the 5-years USSR/WHO randomised study in Leningrad). European Journal of Epidemiology, Vol. 8, pp. 498-502.

Seydel, E; Taal, E; Wiegman, O (1990). Risk- appraisal, outcome and self- efficacy expectancies: cognitive factors in preventive behaviour related to cancer. Psychology and Health, Vol. 4, pp. 99-109.

Shapiro, DE; Venet, W; Strax, P; Vnet, L; Roeser, R (1982). Ten – to – fourteen – year Effect of Screening on Breast Cancer Mortality. Journal of the National Cancer Institute, Vol. 69 (2), pp. 349-355.

Shapiro DE; Boggs; Melamed, BG; Graham- Pole, J (1992). The Effect of Varied Physician Affect on Recall, Anxiety, and Perceptions in Women at Risk for Breast Cancer: An Analogue Study. Health Psychology, Vol. 11 (1), pp. 61-66.

Sharp, D and Power, K (1995). Therapist Contact in Anxiety Disorders. Psychiatry in Practice, September/October.



Sharp, DJ; Peters, TJ; Bartholomew, J; Shaw, A (1996). Breast screening: a randomised controlled trial in UK general practice of three interventions designed to increase uptake. Journal of Epidemiology and Community Health, Vol. 50 (1), pp. 72-76.

Sheeran, P and Abraham, C, (1996): The Health Belief Model. In Conner, M. and Norman, P (Eds) Predicting Health Behaviour, Buckingham: Open University Press.

Sheley, JF and Lesan, GT (1986). Limited impact of the breast self – examination movement: a Latin American illustration. Social Science and Medicine, Vol. 23, pp. 905-910.

Shepperd, SL; Solomon, LJ; Atkins, E; Foster, RS (1990). Determinants of breast self-examination among women of lower income and lower education. Journal of Behavioral Medicine, Vol. 13 (4), pp. 359-371.

Shugg, D; Hill, D; Cooper, D; Sheperd, J (1990). Practice of breast self- examination and the treatment of primary breast cancer. Australian and New Zealand of Surgery, Vol. 60, pp. 455- 462.

Siegler, IC and Costa, PT (1994). Personality and Breast Cancer Screening Behaviors. Annals of Behavioral Medicine, Vol. 16 (4), pp. 347-351.

Sifneos, PE (1973). The prevalence of “alexithymic” characteristics in psychosomatic patients. Psychotherapy and Psychosomatics, Vol. 22 (2-6), pp. 255-262.

Silverstein, AB (1986). Power lost and statistical power regained: The Bonferroni procedure in exploratory research. Educational and Psychological Measurement, Vol. 46, pp. 303-307.

Siminoff, LA (1989). Cancer patient and physician communication: Progress and continuing problems. Annals of Behavioral Medicine, Vol. 11 (3), pp. 108-112.

Siminoff, LA and Fetting, JH (1991) Factors affecting treatment decisions for a life-threatening illness: The case of medical treatment of breast cancer. Social Science and Medicine, Vol. 32 (7), pp. 813-818.

Skaer, TL; Robinson, LM; Sclar, DA; Harding, GH (1996). Knowledge, Attitudes, and Patterns of Cancer Screening: A Self- Report Among Foreign Born Hispanic Women Utilizing Rural Migrant Health Clinics. Journal of Rural Health, Vol. 12 (3), pp. 169-177.

Small, EC (1982). Psychological issues in breast disease. Clinical Obstetrics and Gynaecology, Vol. 25, pp. 447-454.

Smart, CR; Hendrick, RE; Rutledge, JH 3<sup>rd</sup>; Smith, RA (1995). Benefit of mammography screening in women aged 40 to 49 years. Current evidence from randomised controlled trials. Cancer, Vol. 75 (7), pp. 1619-1626.

Smith, IK; Lancaster, CJ; Delbene, VE; Fleming, GA (1990). The Relationship between Medical Students' Locus of Control and Promotion of Breast Self-Examination. Medical Education, Vol. 24, pp. 164-170.

Sobel, J; Curtin, A; Fell, D (1991). The Oregon Breast Cancer Detection and Awareness Project: The Legacy of a Mammogram Screening Campaign. Health Values: Health Behavior, Education and Promotion, Vol. 15 (1), pp. 3-8.

Spangler, JG and Konen, JC (1996). Annual screening mammography among diabetic women. Demographics, psychological stress, and family functioning. Family and Community Health, Vol. 18 (4), pp. 1-8.

Spiegel, D; Bloom, JR; Kraemer, H; Gottheil, E (1989). Effects of psychosocial treatment on survival in patients with metastatic breast cancer. Lancet ii, pp. 888-891.

Spiegel, D; Bloom, JR; Kraemer, H; Gottheil, E (1989). Psychological Support for Cancer Patients. Lancet, Letters to the Editor, Vol. 16, page 1447.

Stachnic, TJ (1980). Priorities for psychology in medical education and health care delivery. American Psychologist, Vol. 35, pp. 8-15.

Stanton, AL and Snider, PR (1993). Coping with a breast cancer diagnosis: A prospective study. Health Psychology, Vol. 12 (1), pp. 16-23.

Stanton, AL; Danoff-Burg, S; Cameron, CL; Bishop, M; Collins, CA, Kirk, SB; Sworowski, LA; Twillman, R (2000). Emotionally Expressive Coping Predicts Psychological and Physical Adjustment to Breast Cancer. Journal of Consulting and Clinical Psychology, Vol. 68 (5), pp. 875-882.

Stein, JA; Fox, SA; Murata, PJ; Morisky, DE (1992). Mammography Usage and the Health Belief Model. Health Education Quarterly, Vol. 19 (4), pp. 447-462.

Steptoe, A; Sutcliffe, I; Allen, B; Coombes, C (1991). Satisfaction with communication, medical knowledge, and coping style in patients with metastatic cancer. Social Science and Medicine, Vol. 32, pp. 627-632.

Steptoe, A; Wardle, J; Vinck, J; Tuomisto, M; Holte, A; Wichstrom, L (1994). Personality and Attitudinal Correlates of Healthy and Unhealthy Life Styles in Young Adults. Psychology and Health, Vol. 9, pp. 331-343.

Stillman, MJ (1977). Women's Health Beliefs about Breast Cancer and Breast Self - Examination. Nursing Research, Vol. 26 (2), pp. 121-27.

Stockhorst, U; Klosterhalfen, S; Steingrueber, HJ (1998). Conditioned nausea and further side effects in cancer chemotherapy: A review. Journal of Psychophysiology, Vol. 12 (Suppl 1), pp. 14-33.

Stoll, BA (1991). Approaches to Breast Cancer Prevention. Kluwer Academic Publicers. Dordrecht, Netherlands.

Stone, AA; Turkkan, JS; Bachrach, CA; Jobe, JB; Kurtzman, HS; Cain, VS (Eds) (2000). The science of self – report: Implications for research and practice. Mahwah, NJ, USA: Lawrence Erlbaum Associates Publishers.

Strauss, LM; Solomon, LJ; Constanza, M.C; Worden, JK and Foster, RS. (1987). Breast Self- Examination Practices and Attitudes of Women with and Without a History of Breast Cancer. Journal of Behavioral Medicine, Vol. 10 (4), pp. 337-350.

Stroemgren, AS; Groenvold, M; Pedrse, L; Olsen, AK; Alf, K; Spile, M; Sjogren, P (2001). Does the medical record cover the symptoms experienced by cancer patients receiving palliative care? A comparison of the record and patient – rating. Journal of Pain and Symptom Management, Vol. 21 (3), pp. 189-196.

Stronegger, WJ; Freidl, W; Rasky, E (1997). Health behaviour: Socioeconomic differences in an Austrian rural county. Social Science and Medicine, Vol. 44 (3), pp. 423-426.

Suarez, L (1994). Pap smear and mammogram screening in Mexican – American women: The effects of acculturation. American Journal of Public Health, Vol. 84 (5), pp. 742-746.

Suls, J and Fletcher, B (1985). The relative efficacy of avoidant and non-avoidant coping strategies: A meta-analysis. Health Psychology, Vol. 4 (3), pp. 249-288.

Suls, J and Harvey, JH (1996). Personality and coping [Special Issue]. Journal of Personality, Vol. 64 (4).

Suominen, T; Leino-Kilpi, H; Laippala, P (1994). Breast cancer patients' perceived participation in health care: How do patients themselves and nurses assess the participation? Nursing Ethics, Vol. 1 (2), pp. 96-109.

Sutton, S; Brickler, G; Sancho-Aldridge, J; Saidi, G (1994). Prospective study of predictors of attendance for breast screening in inner London. Journal of Epidemiology and Community Health, Vol. 48 (1), pp. 65-73.

Sutton, S; Saidi, G; Bickler, G; Hunter, J (1995). Does routine screening for breast cancer raise anxiety? Results from a three wave prospective study in England. Journal of Epidemiology and Community Health, Vol. 49 (4), pp. 413-418.

Swanson, V; McIntosh, IB; Power, KG; Dobson, H (1996). The psychological effects of breast screening in terms of patients' perceived health anxieties. British Journal of Clinical Practice, Vol. 50 (3), pp. 129-135.

Tabachnick, BG and Fidell, LS (2000). Using Multivariate Statistics (2<sup>nd</sup> edition). Harper Collins Publishers, California State University, Northridge.

Tabar, L; Fagerberg, CJ; Gad, A; Baldetorp, L; Holmberg, LH; Grontoft, O; Ljungquist, U; Lundstrom, B; Manson, JC; Eklund, G et al. (1985). Reduction in mortality from breast cancer after mass screening with mammography. Randomised trial from the Breast Cancer Screening Working Group of the Swedish National Board of Health and Welfare. Lancet, Vol. 13 (1), pp. 829-832.

Tabar, L; Fagerberg, G; Duffy, SW; Day, NE; Gad, A; Grontoft, O (1992). Update of the Swedish 2-county program of mammography screening for breast cancer. Radiology Clinics of Northern America, Vol. 30, pp. 187-210.

Tabar, L; Vitak, B; Chen, HH; Yen, MF; Duffy, SW; Smith, RA (2001). Beyond randomised controlled trials: organised mammographic screening substantially reduces breast carcinoma mortality. Cancer, Vol. 91 (9), pp. 1724-1731.

Tas, F; Eralp, Y; Basaran, M; Sakar, B; Alici, S; Argon, A; Bulutlar, G; Camlica, H; Aydiner, A; Topuz, E (2002). American Journal of Clinical Oncology, Vol. 25 (4), pp. 371-379.

Taylor, DH; McPherson, K; Parbhoo, S; Perry, N (1996). Response of women aged 65-74 to invitation for screening for breast cancer by mammography: A pilot study in London, UK. Journal of Epidemiology and Community Health, Vol. 50 (1), pp. 77-80.

Taylor, S (1991). Health Psychology, New York: McGraw – Hill.

Taylor, SE; Lichtman, RR; Wood, JV (1984). Attributions, beliefs about control and adjustment to breast cancer. Journal of Personality and Social Psychology, Vol. 46 (3), pp. 489-502.

Taylor, TV; Rimmer, S; Forrest, APM (1980). The Patient's Subjective Attitude towards Screening for Breast Cancer. Should Screening be extended to other Forms of Cancer? Postgraduate Medical Journal, Vol. 56 (660), pp. 715-717.

Tellengen, A (1985). Structures of mood and personality and their relevance to assessing anxiety, with an emphasis on self – report. In Tuma, AH and Maser, JD (Eds.). Anxiety and the anxiety disorders, Edinburgh: Hillsdale, NJ.

The Scottish Breast Screening Programme Report 1996, Edinburgh 1997.

The state of women's health in the European Community: Report from the Commission to the Council, the European Parliament, The Economic and Social Committee and the Committee of the Regions, Employment and Social Affairs, Public Health (1997). European Commission, Directorate – General for Employment, Industrial Relations and Social Affairs, Unit V/F.1.

Theis, B; Boyd, N; Lockwood, G; Tritchler, D (1994). Accuracy of family cancer history in breast cancer patients. European Journal of Cancer Prevention, Vol. 3 (4), pp. 321-327.



Thomas, A; Bucholz, MD; Xifeng, W (2001). Radiation – induced chromatid breaks as a predictor of breast cancer risk. International Journal of Radiation Oncology, Vol. 49 (2), pp. 533-537.

Thomas, DB; Gao, DL; Ray, RM; Wang, WW; Allison, CJ; Chen, FL et al. (2002). Randomised trial of breast self – examination in Shanghai: final results. Journal of National Cancer Institute Cancer Spectrum, Vol. 94, pp. 1445-1457.

Thomas, DC; Siemiatycki, J; Dewar, J; Robins, M; Goldeberg, M; Armstrong, BG (1985). The problem of multiple inference in studies designed to generate hypotheses. American Journal of Epidemiology, Vol. 122 (6), pp. 1080-1095.

Thomas, EJ & Petersen, LA (2003). Measuring errors and adverse events in health care. Journal of General Internal Medicine, Vol. 18, pp. 61-67.

Thomson, C; Currie, C; Todd, J; Elton, R (1999). Changes in HIV/AIDS education, knowledge and attitudes among Scottish 15-16 year olds, 1990-1994: Findings from the WHO: Health Behaviour in School-aged Children Study (HBSC). Health Education Research, Vol. 14 (3), pp. 357-370.

Timko, C and Janoff-Bulman, R (1985). Attributions, vulnerability, and psychological adjustment: The case of breast cancer. Health Psychology, Vol. 4 (6), pp. 521-544.

Timko, C (1987). Seeking Medical Care for a Breast Cancer Symptom: Determinants of Intentions to Engage in Prompt or Delay Behavior. Health Psychology, Vol. 6, pp.305.

Umeh, KF (1998). Coping styles as moderators of cognition-decision relations amongst adolescents. Psychology and Health, Vol. 13 (6), pp. 987-1003.

USERS' VIEWS: A Report of the Second Survey of Women's Views of the Scottish Breast Screening Programme 1993, Acceptability Committee of the Scottish Breast Screening Programme, Edinburgh 1995.

Valanis, BG and Rumpler, CH (1985). Helping women to choose breast cancer treatment alternatives. Cancer Nursing, Vol. 8 (3), pp. 167-175.

Van Brederode, CM (1978). Mastectomy: Experiences of women and professional helpers. In Brand, PC and van Keep, PA (Eds), Breast cancer psycho-social aspects of early detection and treatment, Lancaster: MTP Press.

Van Der Velde, W and Van Der Pligt, J (1991). AIDS-related behavior: Coping, protection motivation and previous behavior. Journal of Behavioral Medicine, Vol. 14, pp. 429-451.

Verbeek, AL; Hendrikis, JH; Holland, R; Mravunac, M; Sturmans F; Day, N.E. (1984) Reduction of Breast Mortality through Mass Screening with Modern Mammography: First Results of the Nijmegen Project, 1975-1989. Lancet, Vol. 1 (8388), pp. 1222-1224.

Vernon, SW, Laville, EA; Jackson, G. L. (1990). Participation in Breast Screening Programmes: A Review. Social Science and Medicine, Vol. 30 (10), pp. 1107-18.

Vinokur, AD; Threath, BA; Vinokur-Kaplan, D; Satariano, WA (1990). The process of recovery from breast cancer for younger and older patients: Changes during the first year. Cancer, Vol. 65 (5), pp. 1242-1254.

Visser, MR and Smets, EM (1998). Fatigue, depression and quality of life in cancer patients: How are they related? Support Care Cancer, Vol. 6 3, pp. 101-108.

Vogel, VG; Graves, DS; Coody, DK; Winn, RJ; Peters, GN (1990). Breast screening compliance following a statewide low-cost mammography project. Cancer Detection Preview, Vol. 14 (5), pp. 573-576.

Waitzkin, H. (1984). Doctor-Patient Communication: Clinical Implications of Social Scientific Research. Journal of the American Medical Association, Vol. 252, pp. 2441-2446.

Wakeford, R (1983). Communication skills training in UK medical schools: a discussion of the present situation and obstacles to innovation and change in undergraduate medical education. In Pendelton, D and Hasler, J (Eds). Doctor-Patient Communication, London: Academic Press.

Wald, NJ; Chamberlain, J; Hackshaw, A (1994). European Society of Mastology Consensus Conference on breast cancer screening: report of the evaluation committee. British Journal of Radiology, Vol. 67, pp. 925-933.

Walker, QJ and Langlands, AO (1986). The misuse of mammography in the management of breast cancer. Medical Journal Aust, Vol. 145 (5), pp. 185-187.

Walker, LG; Cordiner, CM; Gilbert, FJ; Needham, G; Deans, HE; Affleck, IR; Hood, DB (1994). How distressing is attendance for routine breast screening? Psycho-Oncology, Vol. 3, pp. 299-304.

Walker, LG (1996). Communication Skills: When, Not If, To Teach, Editorial. European Journal of Cancer, Vol. 32A (9), pp. 1457-1459.

Walker, LG; Walker, MB; Heys, SD; Lolley, J; Wesnes, K; Eremin, O (1997). The psychological and psychiatric effects of rIL-2 therapy: A controlled clinical trial. Psycho-Oncology, Vol. 6 (4), pp. 290-301.

Walker, LG (1999). Psychological intervention, host defenses and survival. Advances in Mind and Body Medicine, Vol. 15 (4), pp. 273-275.

Walker, LG; Heys, SD; Eremin, O (1999). Surviving cancer: Do psychosocial factors count? Journal of Psychosomatic Research, Vol. 47 (6), pp. 497-503.

Walker, LG; Walker, MB; Ogston; Heys, SD; Ah-See, AK; Miller, ID; Hutcheon, AW; Sarkar, TK; Eremin, O (1999). Psychological, clinical and pathological effects of relaxation training and guided imagery during primary chemotherapy. British Journal of Cancer, Vol. 80 (1/2), pp. 262-268.

Wallston, KA; Wallston, BS; De Vellis, R (1978). Development of the multidimensional health locus of control (MHLOC) scales. Health Education Monographs, Vol. 6, pp. 160-170.

Wallston, KA and Wallston, BS (1981). Health locus of control scales. In Lefcovet, H (Ed.). Advances and innovations in health locus of control. Academic Press.

Wardle, F; Cllins, W; Pernet, A; Whitehead, M; Bourne, T; Campbell, S (1993). Psychological impact of screening of familial ovarian cancer. Journal of the National Cancer Institute, Vol. 85, pp. 653-657.

Wardle, J., Steptoe, A., Smith, H., Groll- Knapp, E., Koller, M., Smith, D. (1995). Breast self- examination: attitudes and practices among young women in Europe. European Journal of Cancer Prevention, Vol. 4, pp. 61-68.

Warr, P, Barter, J; Brownbridge, G (1983). On the Independence of Positive and Negative Affect. Journal of Personality and Social Psychology, Vol.44 (3)., pp. 644-651.

Wasyliw, L and Fekken, C (2002). Personality and self – reported health: matching predictors and criteria. Personality and Individual Differences, Vol. 33, pp. 607-620.

Watson, D and Clark, LA (1984). Negative Affectivity: The Disposition to Experience Aversive Emotional States. Psychological Bulletin, Vol. 96 (3), pp.465-490.

Watson, M; Greer, S; Blake, S; Shrapnell, K (1984). Reaction to a diagnosis of breast cancer: Relationship between denial, delay, and rates of psychological morbidity. Cancer, Vol. 53 (9), pp. 2008-2012.

Watson, D; Clark, LA; Tellengen, A (1988a). Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales. Journal of Personality and Social Psychology, Vol. 54 (6), pp. 1063-1070.

Watson, D; Clark, LA; Carey, G (1988). Positive and Negative affectivity and their Relation to Anxiety and Depressive Disorders. Journal of Abnormal Psychology, Vol. 97 (3), pp. 346-353.

Watson, M (1988). Breast cancer: psychological factors influencing progression. In Cooper, CL (Ed) Stress and Breast Cancer, pp. 65-75. Oxford: John Wiley and Sons.

Watzlaf, VJ; Kato, A; D' Amico, F (1996). Obstacles encountered in the use of medical record and cancer registry abstract in the breast cancer research. Topics on Health Information and Management, Vol. 17 (1), pp. 25-33.

Weakland, JH (1977). Family Somatics – a neglected edge. Family Processes, Vol. 16, pp. 263-273.

Weatherly-White, RCA (1980). Plastic Surgery of the Female Breast, Hagerstown, MD: Harper and Row.

Webber, PA; Fox, P; Zhang, X; Pond, M (1996). An Examination of Differential Follow-up Rates in Breast Cancer Screening. Journal of Community Health: the Publication for Health Promotion and Disease Prevention, Vol. 21 (20), pp. 123-132.

Weeks, J (1992). Quality of life assessment: performance status upstaged? Journal of Clinical Oncology, Vol. 10, pp. 1827-1829.

Weinberger, DA, Schwartz, GE; Davidson, RJ (1979). Low-anxious, high-anxious, and repressive coping styles: psychometric patterns and behavioral and physiological responses to stress. Journal of Abnormal Psychology, Vol. 88, pp. 396-380.

Weinberger, DA (1990). The construct validity of the repressive coping style. In J.L. Singer (Ed.), Repression and dissociation: Implications for personality theory, psychopathology, and health (pp.337-386). Chicago: The University of Chicago Press.

Weinman, J and Johnston, M (1995). Coping. In Weinman, J, Wright, S and Johnston, M. Measures in Health Psychology: A User's Portfolio, UK: NFER-Nelson.

Weinstein, ND (1988). The Precaution Adoption Process. Health Psychology, Vol. 7 (4), pp. 355-86.

Weisman, AD and Worden, JW (1975). Psychological analysis of cancer deaths. Omega: Journal of Death and Dying, Vol. 6 (1), pp. 61-75.

Weisman, AD and Worden, JW (1976-1977). The Existential Plight in Cancer: Significance of the first 100 days. International Journal of Psychiatry and Medicine, Vol. 7 (1), pp. 1-15.

Wellisch, DK; Jamison, KR; Pasnau, RO (1978). Psychosocial aspects of mastectomy: II. The man's perspective. American Journal of Psychiatry, Vol. 135 (5), pp. 543-546.

Wellisch, DK; Schain, WS; Noone, BR; Little, JW (1985). Psychosocial correlates of immediate versus delayed reconstruction of the breast. Plastic Reconstructive Surgery, Vol. 76, pp. 713-718.

Wellisch, DK; Gritz, ER; Schain, W; Wang, H; Siau, J (1991). Psychological Functioning of Daughters of Breast Cancer Patients. Psychosomatics: Journal of Consultation and Liaison Psychiatry, Vol. 32 (3), pp. 324-336.



White, DA; Orenstein, M; Godwin, TA; Stover, DE (1984). Chemotherapy – associated pulmonary toxic reactions during treatment for breast cancer. Archives of Internal Medicine, Vol. 144 (5), pp. 953-956.

White, E; Valentgas, P; Mandelson, M et al. (1998). Variation in mammographic breast density by time in menstrual cycle among women aged 40-49 years. Journal of National Cancer Institute, Vol. 90, pp. 906-910.

White, MV; Wearing AJ; Hill DJ (1994). Is the Conflict Model of Decision Making Applicable to the Decision to be screened for Cervical Cancer? Journal of Behavioral Decision Making, Vol. 7 (1), pp. 57-72.

Whitehead, M (1988). The health divide. Inequalities in Health: The Black Report and the Health Divide. Harmondsworth: Penguin.

Wieder, S; Schwarzfeld, J; Fromewick, J; Holland, JC (1978). Psychosocial support program for patients with breast cancer at Montefiore Hospital: Team effort. Quality Review Bulletin, Vol. 4 (1), pp. 10-13.

Wilson, JMG and Junger, G (1968). Principle and Practice of Screening for Disease. World Health Organisation Public Health Paper.

Winchester, DP; Lasky, HJ; Sylvester, J; Maher, ML (1988) A Television- promoted Mammography Screening Pilot Project in the Chicago Metropolitan Area. CA: Cancer Journal for Clinicians, Vol. 38 (5), pp. 291-309.

Winick, L and Robbins, GF (1977). Physical and psychologic adjustment after mastectomy: An evaluation of Memorial Hospital's PMRG program. *Cancer*, Vol. 2, pp. 478-486.

Winningham, ML; Nail, LM; Burke, MB et al. (1994). Fatigue and the cancer experience: The state of knowledge. *Oncology Nursing Forum*, Vol. 21 (1), pp. 23-36.

Wirsching, M; Georg, W; Hoffman, F; Riehl, J; Schmidt, P (1988). Psychosocial factors influencing health development in breast cancer and mastopathia: a general systems study, pp. 97-107. In Cooper, CL (Ed), *Stress and Breast Cancer*, Oxford: John Wiley and Sons.

Women's attitudes regarding breast cancer (1974). *Occupational Health Nursing*, Vol. 22 (2), pp. 20-23.

Women's attitudes regarding breast cancer (1975). *Journal of the Medical Association of the State of Alabama*, Vol. 44 (8), pp. 419-440.

Wood, RY (1994). Reliability and validity of a breast self – examination proficiency rating instrument. *Evaluation and the Health Professions*, Vol. 17 (4), pp. 418-435.

Woodruff, SI (1998). The epidemiology of smoking among United States navy women recruits: Prevalence, correlates, and short-term effects of involuntary cessation. *Dissertation Abstracts International: Section B: The Science and Engineering*, Vol. 59 (5 – B), pp. 2161.

Woods, NF and Earp, JA (1978). Women with cured breast cancer: A study of mastectomy patients in North Carolina. Nursing Research, Vol. 27 (5), pp, 279-285.

World Health Organisation (WHO) (1995a). Highlights on women's health in Europe, Copenhagen: WHO Regional Office for Europe.

Wortman, C and Dunkel-Schetter, C (1979). Interpersonal relationships and cancer. Journal of Social Issues, Vol. 35, pp. 120-129.

Wright, CJ (1986). Breast Cancer Screening: A Different Look at the Evidence. Surgery, Vol. 100 (5), pp. 594-598.

Wright, CJ and Mueller, CB (1995). Screening mammography and public health policy: the need for perspective. Lancet, Vol. 346, pp. 29-32.

Wyper, MA (1990). Breast Self- Examination and the Health Belief Model: Variations on a Theme. Research in Nursing and Health, Vol. 13, pp. 421-428.

Yeaton, WH; Smith, D; Rogers, K (1990). Evaluating Understanding of Popular Press Reports of Health Research. Health Education Quarterly, Vol. 17 (2), pp. 223-234.

Zapka, JG; Stoddard, A; Barth, R; Constanza, ME; Mas, E (1989) Breast Cancer Screening Utilization by Latina Community Health Center Clients. Health Education Research, Vol. 4 (4), pp. 461-478.

Zeidner, M (1994). Personal and contextual determinants of coping and anxiety in an evaluative situation: A prospective study. Personality and Individual Differences, Vol. 16 (6), pp. 899-918.

Zemore, R and Shepel, LF (1989). Effects of breast cancer and mastectomy on emotional support and adjustment. Social and Medicine, Vol. 28 (1), pp. 19-27.

Zemore, R; Rinholm, J; Shepel, LF; Richards, M (1989). Some Social and Emotional Consequences of Breast Cancer and Mastectomy: A Content Analysis of 87 Interviews. Journal of Psychosocial Oncology, Vol. 7 (4), pp. 33-45.

### **Websites**

<http://www.cancerhelp.org.uk/help/default>: Cancer Research UK, 2003

<http://www.cancerresearchuk.org>: Cancer/Statistics, 2003

<http://www.cancerscreening.nhs.uk>/ Breast Cancer, 2003

<http://www.show.scot.nhs.uk>: Cancer/Facts and Figures, 2003

## **Appendices**

**Appendix I:**

**Information letters that accompanied the set of scales used in  
Breast Self – Examination Research Studies in Scotland**

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# **ANXIETY & STRESS RESEARCH CENTRE**

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# **UNIVERSITY OF STIRLING**

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## **Information Letter**

Dear Member of Staff,

I am writing to request your assistance in relation to a research project concerning the attitudes and beliefs of female university staff and students towards breast self examination and breast problems. Although previous research has provided some evidence that women's attitudes affect their health, the picture remains unclear. The aim of the present research is to provide a clearer picture of the relationship between health related attitudes and behaviour.

In order to achieve this I am writing to request your voluntary participation by completing the enclosed questionnaire. This questionnaire is being sent to half of the all the female employees of University of Stirling and your name has been selected at random from personnel records.

This research has the approval of the Department of Psychology Ethics Committee and the co-operation of the University Personnel and Occupational Health Departments. You will find enclosed an addressed envelope for the return of the questionnaire to Dr Vivien Swanson (Anxiety and Stress Research Centre, Department of Psychology) by internal mail.

In order to adhere to ethical requirements and the Data Protection Act, responses will be anonymous and individuals will not be identifiable from the data. Your name will not be recorded on the questionnaire and there is no way you can be identified from the information requested.

I am well aware of the many demands already placed upon your time but I would be grateful if you would take the 20 minutes (approximately) required to complete this questionnaire. You will appreciate that, to achieve an accurate reflection of women's views regarding breast self - examination and breast health care, a high response rate is required. I would therefore be grateful if you complete all sections of the questionnaire and return it within 7 to 10 days of receipt.

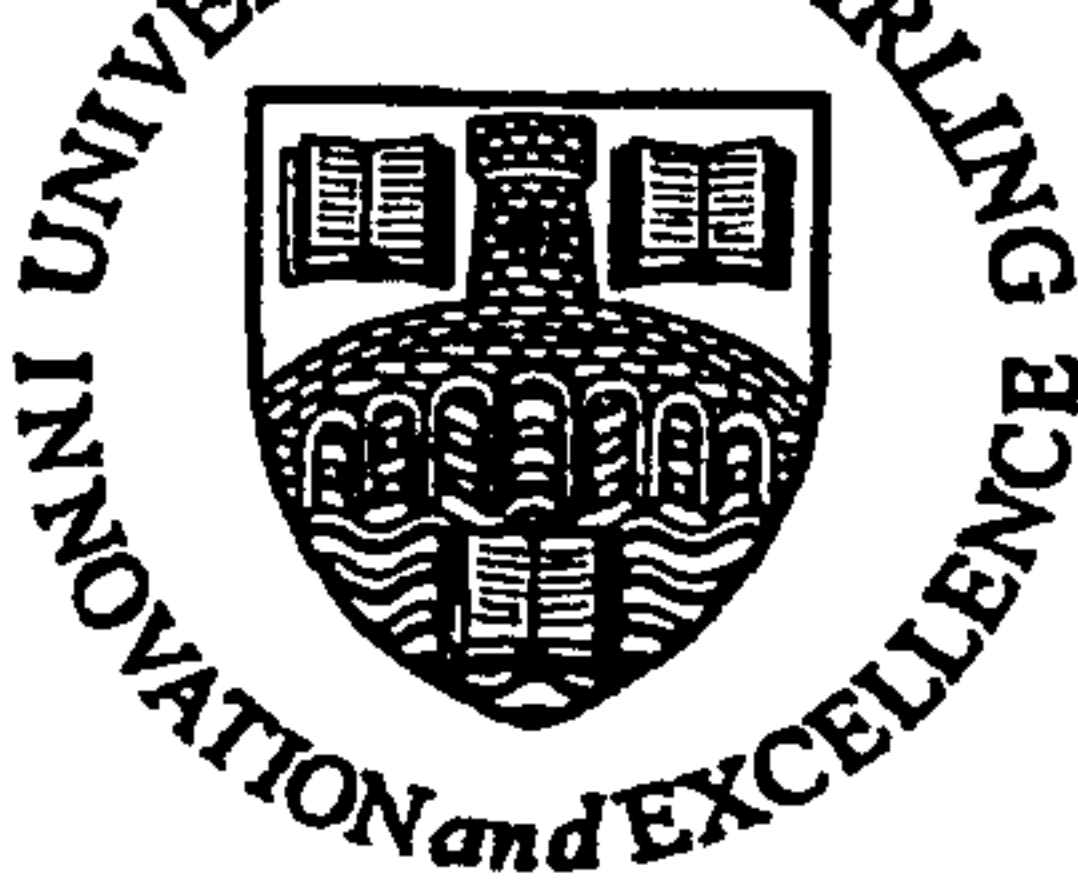
I must emphasise that participation is completely voluntary, anonymous and confidential. If you have any queries regarding this research, please do not hesitate to contact Dr Vivien Swanson on extension 7685.

It is intended that results of this research will be made available to all female staff. To this end there is space at the end of the questionnaire for you to let us know how you would like this feedback.

Many thanks for your co-operation  
Yours Faithfully  
Zoe Chouliara  
PhD student

Supervised by:  
Professor K.G. Power  
(Anxiety and Stress Research Centre Director)  
Dr Vivien Swanson  
(Anxiety and Stress Research Centre, Research Administrator)





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## Information Letter

Dear Student,

I am writing to request your assistance in relation to a research project concerning the attitudes and beliefs of national and overseas female students towards breast checks, breast screening (mammography) and breast awareness in general. Although previous research has provided some evidence that women's attitudes affect their health, the picture is still unclear. The aim of the present research is to provide a clearer picture of the relationship between health related attitudes and behaviour.

In order to achieve this I am writing to request your voluntary participation by completing this questionnaire.

**This research has the approval of the Department of Psychology Ethics Committee.**

In order to adhere to ethical requirements and the Data Protection Act, responses will be completely anonymous. Your name will not be recorded on the questionnaire and there is no way you can be identified from the information requested.

I am well aware of the many demands already placed upon your time and the requirements of your course but I would be grateful if you would take the 20 minutes (approximately) required to complete this questionnaire. You will appreciate that, to achieve an accurate reflection of women's views regarding breast awareness and breast health care, a high response rate is required.

Therefore, I would like to ask you to return your completed questionnaire sealed in the brown envelope provided and put it in a box placed in my office (number 3A74, opposite to the Psychology Departmental Office) within a week of the day of receipt. You will be awarded a credit for your time and consideration of participation in this project, according to the Subject Panel regulations. I will give you the yellow card immediately when you return the completed questionnaire.

I must emphasise that participation is completely voluntary, anonymous and confidential and that your contribution will be much appreciated. If you have any queries regarding this research, please do not hesitate to contact Dr Vivien Swanson on extension 7685.

It is intended that results of this research will be made available to all female students. There is space at the end of the questionnaire for you to let us know how you would like this feedback and also to make additional comments.

Many thanks for your co-operation  
Yours faithfully  
Zoe Chouliara  
PhD student

Supervised by:

**Professor K. G. Power**

(Anxiety and Stress Research Centre Director)

**Dr Vivien Swanson**

(Anxiety and Stress Research Centre, Research Administrator)

**Appendix II:**

**Questionnaire used in Breast Self – Examination Research Studies**



## PART TWO: KNOWLEDGE RECORD SHEET

This part of the questionnaire looks at your knowledge in relation to breast self - examination and breast problems.

1. A woman is more likely to develop breast cancer if she:  
(Tick as many as you feel appropriate)

	(tick)
is single	
has been married, but has no children	
has been married and has had children	
has had a hysterectomy	
has relatives who have had breast cancer	
is past menopause	
takes birth control pills	
has been hit in the breast	
have no idea	

2. On average, the chances of a woman developing breast cancer are greater after she passes which birthday?  
(Tick one)

	(tick)
20th	
30th	
40th	
50th	
60th	
have no idea	

3. Most lumps discovered in the breast turn out to be cancer. (Tick one)

	(tick)
Yes	
No	
Have no idea	

4. The best time to do breast self examination is: (Tick one)

	(tick)
Just before a period	
Just after period	
In the middle of monthly cycle	

5. Generally, how often should women examine their breasts for possible lumps? (Tick one)

	(tick)
Once a month	
Every other month	
Every three months	
Once a year	
Do not know	

## PART THREE: BREAST SELF EXAMINATION PRACTICE

In this part of the questionnaire we are interested in your practice of breast self - examination. There are no correct answers. Choose the ones that apply to you.

Have you ever performed a breast self - examination? (Circle as applies)

YES

NO

If "YES", go on with questions 1., 2. and 3.

If "NO", proceed to question 4.

1. During the past three months, approximately how many times did you perform breast self examination? (Tick the one which applies to you)

	(tick)
None	
Once	
Twice	
Three or more	

2. During the past year how often did you examine your breasts? (Tick the one which applies to you)

	(tick)
Not at all	
Once or twice	
Once every other month	
Once a month	

3. Indicate which of the procedures below you yourself follow when examining your breasts? (Tick whichever applies. You can tick more than one)

	(tick)
Examine breasts during bath or shower	
Look at breasts in mirror with arms at sides	
Look at breasts in mirror with arms raised over head	
Look at breasts in mirror with hands on hips	
When looking at breasts in mirror, look for swelling, dimpling of skin, or changes in nipple	
Examine breasts while lying down	
When lying down, place hand above head before examining breast on that side	
When lying down, place a towel or pillow under shoulder before examining breasts on that side	
Use right hand to examine left breast and left hand to examine right breast	
Examine breasts in circular or clockwise motion moving from outside in	
When examining breasts, feel for lumps, hard knots, or thickening	
Squeeze the nipple of each breast to look for discharge	

4. Indicate which of the procedures below you think women in general should follow when examining their breasts? (Tick whichever applies. You can tick more than one)

	(tick)
Examine breasts during bath or shower	
Look at breasts in mirror with arms at sides	
Look at breasts in mirror with arms raised over head	
Look at breasts in mirror with hands on hips	
When looking at breasts in mirror, look for swelling, dimpling of skin, or changes in nipple	
Examine breasts while lying down	
When lying down, place hand above head before examining breast on that side	
When lying down, place a towel or pillow under shoulder before examining breasts on that side	
Use right hand to examine left breast and left hand to examine right breast	
Examine breasts in circular or clockwise motion moving from outside in	
When examining breasts, feel for lumps, hard knots, or thickening	
Squeeze the nipple of each breast to look for discharge	

## PART FOUR: ATTITUDES AND BELIEFS

Below is a series of statements about your beliefs towards breast self - examination and breast problems and other health issues. Please circle the number for each statement, which best represents how strongly you agree or disagree with each of the statements.

- 1= Strongly Disagree  
2= Somewhat Disagree  
3= Somewhat Agree  
4= Strongly Agree

- |  |   |   |   |   |
|--|---|---|---|---|
| 1. I am more susceptible to breast cancer, compared with other diseases.   | 1 | 2 | 3 | 4 |
| 2. Among the diseases I can imagine getting, breast cancer is the most serious.  | 1 | 2 | 3 | 4 |
| 3. It may be embarrassing for me to examine my own breasts.  | 1 | 2 | 3 | 4 |
| 4. Doing breast self examination would require starting a new habit, which is difficult.                                     | 1 | 2 | 3 | 4 |
| 5. Regular exercise (at least three times a week) is beneficial to me.   | 1 | 2 | 3 | 4 |
| 6. It is not very likely that I will develop breast cancer during my life time.  | 1 | 2 | 3 | 4 |
| 7. If I developed breast cancer, it would probably have a bad effect on my work either in or outside home.                   | 1 | 2 | 3 | 4 |
| 8. Breast self examination greatly improves the chance of successful treatment and cure for women who develop breast cancer. | 1 | 2 | 3 | 4 |
| 9. If more women examined their breasts regularly, there would be fewer deaths from breast cancer.                           | 1 | 2 | 3 | 4 |
| 10. I have the recommended periodic dental exams in addition to visits for specific problems.                                | 1 | 2 | 3 | 4 |

**1= Strongly Disagree**  
**2= Somewhat Disagree**  
**3= Somewhat Agree**  
**4= Strongly Agree**

11. Breast self examination may be time consuming and interfere with my activities.	1	2	3	4
12. There are so many things that could happen to me that it is pointless to think about the possibility of getting breast cancer.	1	2	3	4
13. I am more likely than the average woman to get breast cancer.	1	2	3	4
14. I worry a lot about getting breast cancer.	1	2	3	4
15. I believe breast cancer can be cured easily.	1	2	3	4
16. Breast self examination can stir up worries and become emotionally stressful.	1	2	3	4
17. By allowing for early detection, breast self examination greatly reduces the harshness of required treatment for women who develop breast cancer.	1	2	3	4
18. Breast self examination may provide me with a sense of control over my health.	1	2	3	4
19. I have regular cervical smear tests.	1	2	3	4
20. I avoid smoking and drinking too much alcohol.	1	2	3	4
21. The older I get the more I think of getting breast cancer.	1	2	3	4
22. Breast cancer could endanger my marriage (or a significant relationship).	1	2	3	4
23. I usually wear seat belts.	1	2	3	4

**1= Strongly Disagree**  
**2= Somewhat Disagree**  
**3= Somewhat Agree**  
**4= Strongly Agree**

24. I eat a well-balanced diet.	1	2	3	4
25. I believe I know how to do breast self - examination correctly.	1	2	3	4
26. Breast cancer is likely to result in a less attractive physical appearance.	1	2	3	4
27. Breast self examination may provide reassurance and a sense of relief.	1	2	3	4
28. My financial security would be endangered if I got breast cancer.	1	2	3	4
29. Breast self examination may be painful.	1	2	3	4
30. Doing breast self examination may prevent future problems for me.	1	2	3	4

-----  
 How much would each of the following influence you to carry out a breast self - examination?

**1= Not At All**  
**2= Not Very Much**  
**3= Quite A Lot**  
**4= Very Much**

31. Reading a relevant article in a magazine/newspaper.	1	2	3	4
32. Watching a relevant TV programme.	1	2	3	4
33. Reading an information leaflet.	1	2	3	4
34. Recommendation by a health care professional (doctor, nurse etc.).	1	2	3	4
35. A family member/relative/friend having done breast self - examination.	1	2	3	4
36. A relative/friend/public figure being sick or having died from breast cancer.	1	2	3	4



The following statements are about your opinion on health generally. Please circle the numbers which best represent how strongly you agree or disagree with each of these statements.

- 1= Strongly Agree
- 2= Moderately Agree
- 3= Slightly Agree
- 4= Slightly Disagree
- 5= Moderately Disagree
- 6= Strongly Disagree

37. If you don't have your health, you don't have anything.	1	2	3	4	5	6
38. There are many things I care about more than my health.	1	2	3	4	5	6
39. Good health is only of minor importance in a happy life.	1	2	3	4	5	6
40. There is nothing more important than good health.	1	2	3	4	5	6

#### PART FIVE: FEELINGS AND EMOTIONS

In this part we are interested in your feelings and emotions in general. The following scale consists of a number of words that describe different feelings and emotions.. Please indicate to what extent you feel this way generally over the last few months.

- 1= very slightly or not at all
- 2= a little
- 3= moderately
- 4= quite a bit
- 5= extremely

1. interested	....	2. distressed	....	3. excited	....
4. upset	....	5. strong	....	6. guilty	....
7. scared	....	8. hostile	.....	9. enthusiastic	.....
10. proud	.....	11. irritable	.....	12. alert	.....
13. ashamed	.....	14. inspired	.....	15. nervous	.....
16. determined	.....	17. attentive	.....	18. jittery	.....
19. active	.....	20. afraid	....		

## PART SIX: HEALTH - RELATED VIEWS AND COPING

In this part we are interested in your view of health issues and in the way you cope with regular health problems.

For each item circle the number that represents the extent to which you disagree or agree with the statement. Please make sure that you answer every item and that you circle only one number per item. This is a measure of your personal beliefs: obviously, there are no right or wrong answers.

- 1= Strongly Disagree
- 2= Moderately Disagree
- 3= Slightly Disagree
- 4= Slightly Agree
- 5= Moderately Agree
- 6= Strongly Agree

- |  |   |   |   |   |   |   |
|--|---|---|---|---|---|---|
| 1. If I get sick, it is my own behaviour which determines how soon I get well again.   | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. No matter what I am doing, I will get sick.   | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. Having regular contact with my doctor is the best way for me to avoid illness.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Most things that affect my health happen to me by accident.   | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. Whenever I don't feel well, I should consult a medically trained professional.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. I am in control of my health.   | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. My family has a lot to do with my becoming sick or staying healthy.   | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. When I get sick, I am to blame.   | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. Luck plays a big part in determining how soon I will recover from an illness.   | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. Health professionals control my health.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. My good health is largely a matter of good fortune.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. The main thing which affects my health is what I myself do.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. If I take care of myself, I can avoid illness.   | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. When I recover from an illness, it is usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me. | 1 | 2 | 3 | 4 | 5 | 6 |

- 1= Strongly Disagree**  
**2= Moderately Disagree**  
**3= Slightly Disagree**  
**4=Slightly Agree**  
**5= Moderately Agree**  
**6= Strongly Agree**

- |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| 15. No matter what I do, I am likely to get sick.                     | 1 | 2 | 3 | 4 | 5 | 6 |
| 16. If it's meant to be, I will stay healthy.                         | 1 | 2 | 3 | 4 | 5 | 6 |
| 17. If I take the right actions, I can stay healthy.                  | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. Regarding my health, I can only do what my doctor tells me to do. | 1 | 2 | 3 | 4 | 5 | 6 |

-----

In this last section of the questionnaire we are interested in the way you confront regular health problems. For each item circle the number that represents the extent to which you use it. Please make sure that you answer every item and that you circle only one number per item.

- 1= I usually don't do this at all**  
**2= I usually do this a little bit**  
**3= I usually do this a medium amount**  
**4= I usually do this a lot**

- |  |   |   |   |   |
|--|---|---|---|---|
| 1. I feel a lot of emotional distress and I find myself expressing those feelings a lot. | 1 | 2 | 3 | 4 |
| 2. I try to get emotional support from friends or relatives.                             | 1 | 2 | 3 | 4 |
| 3. I use alcohol or drugs to help me get through it.                                     | 1 | 2 | 3 | 4 |
| 4. I learn to live with it.  | 1 | 2 | 3 | 4 |
| 5. I try to lose myself for a while by drinking alcohol or taking drugs.                 | 1 | 2 | 3 | 4 |
| 6. I concentrate my efforts on doing something about it.                                 | 1 | 2 | 3 | 4 |
| 7. I get used to the idea that it happened.  | 1 | 2 | 3 | 4 |
| 8. I pretend that it hasn't really happened.   | 1 | 2 | 3 | 4 |
| 9. I do what has to be done, one step at a time.   | 1 | 2 | 3 | 4 |
| 10. I drink alcohol or take drugs, in order to think about it less.                      | 1 | 2 | 3 | 4 |
| 11. I get upset and I am really aware of it.   | 1 | 2 | 3 | 4 |
| 12. I take additional action to try to get rid of the problem.                           | 1 | 2 | 3 | 4 |
| 13. I talk to someone about how I feel.  | 1 | 2 | 3 | 4 |

**1= I usually don't do this at all**  
**2= I usually do this a little bit**  
**3= I usually do this a medium amount**  
**4= I usually do this a lot**

- |   |   |   |   |   |
|---|---|---|---|---|
| 14. I use alcohol or drugs to make myself feel better.            | 1 | 2 | 3 | 4 |
| 15. I accept that this has happened and that it can't be changed. | 1 | 2 | 3 | 4 |
| 16. I discuss my feelings with someone.                           | 1 | 2 | 3 | 4 |
| 17. I refuse to believe that it has happened.                     | 1 | 2 | 3 | 4 |
| 18. I get upset and let emotions out.                             | 1 | 2 | 3 | 4 |
| 19. I get sympathy and understanding from someone.                | 1 | 2 | 3 | 4 |
| 20. I take direct action to get around the problem.               | 1 | 2 | 3 | 4 |
| 21. I let my feelings out.  | 1 | 2 | 3 | 4 |
| 22. I act as though it hasn't really happened.                    | 1 | 2 | 3 | 4 |
| 23. I say to myself "this isn't real".                            | 1 | 2 | 3 | 4 |
| 24. I accept the reality of the fact that it happened.            | 1 | 2 | 3 | 4 |

**If you have any additional comment you would like to make, please do so in the space provided.....**

.....  
.....  
.....

**Thank for your time and trouble to complete this questionnaire.**

**Could you please check that you have answered all questions.**

**If you have any queries, regarding the present research, please contact Dr Vivien Swanson in the Anxiety and Stress Research Centre (Dept. of Psychology: 3A96, Telephone Number: 01786 467685).**

**Appendix III:**

**Questionnaire used in Breast Self – Examination Research Studies  
(in Greek)**

**TEXT BOUND INTO  
THE SPINE**

ΜΕΡΟΣ ΠΡΩΤΟ

2. ΗΛΙΚΙΑ: .....

2. ΤΜΗΜΑ .....

3. ΤΟΜΕΑΣ .....

4. ΕΤΟΣ ΣΠΟΥΔΩΝ .....

5. ΟΙΚΟΓΕΝΕΙΑΚΗ ΚΑΤΑΣΤΑΣΗ

(Βάλτε ✓ στην απάντηση που ταιριάζει στην περίπτωσή σας)

Παντρεμένη/ σε συμβίωση	
Διαζευγμένη/ σε διάσταση	
Χήρα	
Ελεύθερη	

6. ΑΡΙΘΜΟΣ ΠΑΙΔΙΩΝ

(Βάλτε ✓ στην απάντηση που ταιριάζει στην περίπτωσή σας)

δεν έχω παιδιά	
έχω ένα παιδί	
έχω δύο παιδιά	
έχω τρία παιδιά	
έχω περισσότερα από δύο παιδιά	

7. ΘΡΗΣΚΕΥΜΑ .....

8. Έχετε εμφανίσει ποτέ κάποιο πρόβλημα στο στήθος; (Βάλτε σε κύκλο την απάντηση που ταιριάζει στην περίπτωσή σας)

ΝΑΙ

ΌΧΙ

Αν ΝΑΙ, περιγράψτε το πρόβλημα/προβλήματα σύντομα.

.....

9. Έχετε ποτέ διαγνωστεί με οποιαδήποτε μορφή καρκίνου, εκτός από καρκίνο του μαστού; (Βάλτε σε κύκλο την απάντηση που ταιριάζει στην περίπτωσή σας)

ΝΑΙ

ΌΧΙ

Αν ΝΑΙ, με ποια μορφή καρκίνου; .....

Ποιο/α από τα παρακάτω μέλη της οικογένειάς σας έχει διαγνωστεί με καρκίνο του μαστού; (Βάλτε ✓ στις απαντήσεις με τις οποίες συμφωνείτε. Μπορείτε να βάλετε ✓ σε περισσότερες από μία απαντήσεις).

Μητέρα σας	
Πατέρα σας (από την πλευρά της μητέρας)	
Πατέρα σας (από την πλευρά του πατέρα)	
Αδερφή σας	
Αδελφός σας	
Άλλο μέλος (Αναφέρατε.....)	
Κανένα μέλος της οικογένειας	
Δεν ξέρω	

11. Ποιο/α από τα παρακάτω μέλη της οικογένειάς σας έχει διαγνωστεί με οποιαδήποτε μορφή καρκίνου εκτός από καρκίνο του μαστού; (Βάλτε ✓ στις απαντήσεις με τις οποίες συμφωνείτε. Μπορείτε να βάλετε ✓ σε περισσότερες από μία απαντήσεις).

Η μητέρα σας	
Η γιαγιά σας (από την πλευρά της μητέρας)	
Η γιαγιά σας (από την πλευρά του πατέρα)	
Η αδερφή σας	
Η θεία σας	
Άλλο μέλος (Αναφέρατε.....)	
Κανένα μέλος της οικογένειας	
Δεν ξέρω	

12. Καπνίζετε; (Βάλτε ✓ σε μία μόνο απάντηση)

ΝΑΙ	
ΌΧΙ	

Αν ΝΑΙ, πόσα τσιγάρα περίπου καπνίζετε την ημέρα; .....

13. Πίνετε οινοπνευματώδη ποτά; (Βάλτε ✓ σε μία μόνο απάντηση)

ΝΑΙ	
ΌΧΙ	

Αν ΝΑΙ, περίπου πόσες μεζούρες αλκοόλ πίνετε την εβδομάδα; (1 μεζούρα = 1 κουτί μπύρα ή 1 ποτήρι κρασί ή μισό ποτό ή 1 σφηνάκι)

## ΜΕΡΟΣ ΔΕΥΤΕΡΟ

1. Μια γυναίκα έχει περισσότερες πιθανότητες να εμφανίσει καρκίνο του μαστού αν...  
 Βάλτε ✓ στις προτάσεις με τις οποίες συμφωνείτε. Μπορείτε να βάλετε ✓ σε περισσότερες από μία προτάσεις).

είναι ανύπαντρη	
είναι παντρευτεί αλλά δεν έχει παιδιά	
είναι παντρευτεί και έχει παιδιά	
είναι κάνει υστερεκτομή (αφαίρεση μήτρας)	
είναι συγγενείς που έχουν καρκίνο του μαστού	
είναι στην εμμηνόπαυση	
είναι παίρνει αντισυλληπτικά χάπια	
είναι έχει χτυπήσει στο στήθος	
δεν ξέρω	

2. Κατά προσέγγιση, οι πιθανότητες μιας γυναίκας να εμφανίσει καρκίνο του μαστού αυξάνονται σημαντικά όταν γίνεται ...  
 (Βάλτε ✓ σε μία μόνο από τις προτάσεις)

20 χρονών	
30 χρονών	
40 χρονών	
50 χρονών	
60 χρονών	
δεν ξέρω	

3. Ποια περισσότερα χρόνια που εμφανίζονται στο στήθος είναι καρκίνος.  
 Βάλτε ✓ σε μία μόνο απάντηση)

είναι	
δεν είναι	
δεν ξέρω	

4. Ποια είναι η καλύτερη χρονική στιγμή για την αυτοεξέταση του μαστού  
 (Βάλτε ✓ σε μία μόνο απάντηση)

Λίγο πριν την περίοδο	
Αμέσως μετά την περίοδο	
Στη μέση του κύκλου	

5. Γενικά, πόσο συχνά πρέπει μια γυναίκα να κάνει αυτοεξέταση μαστού  
 (Βάλτε ✓ σε μία μόνο απάντηση)

Μια φορά το μήνα	
Μήνα παρά μήνα	
Κάθε τρεις μήνες	
Μια φορά το χρόνο	
Δεν ξέρω	

## ΜΕΡΟΣ ΤΡΙΤΟ

Οι παρακάτω προτάσεις αναφέρονται στη μαστογραφία. Βάλτε ✓ στο κατάλληλο κουτάκι ανάλογα με το αν συμφωνείτε ή διαφωνείτε με κάθε πρόταση.

	ΣΥΜΦΩΝΩ	ΔΙΑΦΩΝΩ	ΔΕΝ ΞΕΡΩ
Η μαστογραφία μπορεί να εντοπίσει πολλά προβλήματα του στήθους που δεν είναι καρκίνος και πολλά από αυτά δεν θα είχαν εντοπιστεί με άλλο τρόπο.			
Αν μία γυναίκα κάνει μαστογραφία και βγει "καθαρή", δεν χρειάζεται να ξανακάνει μαστογραφία.			
Η μαστογραφία μπορεί να βρει τον καρκίνο του μαστού μέχρι και δύο χρόνια πριν η ίδια η γυναίκα ή ο/η γιατρός της ανακαλύψει τον όγκο ή παρατηρήσει κάποια παθολογική αλλαγή στο στήθος.			
Η μαστογραφία είναι πιο κατάλληλη για νεώτερες γυναίκες, επειδή είναι πιο έγκυρη.			



## ΜΕΡΟΣ ΤΕΤΑΡΤΟ

Έχετε επιχειρήσει ποτέ να κάνετε αυτοεξέταση του μαστού;  
(Βάλτε σε κύκλο την απάντηση που ταιριάζει στην περίπτωση σας)

ΝΑΙ                      ΟΧΙ

**ΝΑΙ, ΠΑΡΑΚΑΛΩ ΑΠΑΝΤΗΣΤΕ ΤΙΣ ΕΡΩΤΗΣΕΙΣ 1., 2., 3. ΚΑΙ 4. Σ' ΑΥΤΗ ΤΗ ΣΕΛΙΔΑ.**

**ΟΧΙ, ΓΥΡΙΣΤΕ ΣΤΗΝ ΕΠΟΜΕΝΗ ΣΕΛΙΔΑ ΚΑΙ ΑΠΑΝΤΗΣΤΕ ΤΙΣ ΕΡΩΤΗΣΕΙΣ 5. ΚΑΙ 6.**

1. Πόσες φορές περίπου κάνατε αυτοεξέταση του μαστού τους περασμένους τρεις μήνες; (Βάλτε √ μόνο στην απάντηση που ταιριάζει στην περίπτωση σας)

Καμία	
Μία φορά	
Δύο φορές	
Τρεις ή περισσότερες	

2. Πόσο συχνά κάνατε αυτοεξέταση μαστού τον περασμένο χρόνο; (Βάλτε √ μόνο στην απάντηση που ταιριάζει στην περίπτωση σας)

Καθόλου	
Μία με δύο φορές	
Μήνα παρά μήνα	
Μια φορά το μήνα	

Βάλτε √ σε όσα από τα παρακάτω βήματα ακολουθείτε εσείς προσωπικά, όταν κάνετε αυτοεξέταση του μαστού (Μπορείτε να βάλετε √ σε περισσότερα από ένα βήματα)

Βάζετε το στήθος, όταν κάνετε μπάνιο ή ντους.	
Βάζετε το στήθος στον καθρέφτη προσεχτικά, έχοντας τα χέρια στη μέση.	
Βάζετε το στήθος στον καθρέφτη προσεχτικά με τα χέρια πίσω από το κεφάλι.	
Βάζετε το στήθος στον καθρέφτη προσεχτικά, έχοντας τα χέρια στην περιφέρεια.	
Βάζετε το στήθος στον καθρέφτη προσεχτικά, για να δείτε αν υπάρχει κάποιο πρήξιμο, μαθητική ανωμαλία ή αλλαγές στην εμφάνιση της θηλής.	
Ψαφείτε το στήθος, όταν βρίσκεστε ξαπλωμένη.	
Κλόνετε, βάζετε το ένα χέρι πάνω από το κεφάλι και εξετάζετε το στήθος σ' αυτή την πλευρά.	
Κλόνετε, τοποθετείτε μια διπλωμένη πετσέτα ή ένα μαξιλάρι κάτω από τον ένα ώμο και εξετάζετε το στήθος σ' αυτή την πλευρά.	
Χρησιμοποιείτε το δεξί χέρι για να εξετάσετε το αριστερό στήθος και το αριστερό χέρι για να εξετάσετε το δεξί στήθος.	
Εξετάζετε το στήθος με κυκλικές κινήσεις, ακολουθώντας τη φορά των δεικτών του ρολογιού αρχίζοντας από έξω προς τα μέσα.	
Όταν εξετάζετε το στήθος, ψειλαφέετε προσεκτικά, ψάχνοντας για ογκίδια ή σκληρά σημεία.	
Εξετάζετε ελαφρά τη θηλή σε κάθε στήθος, για να δείτε αν υπάρχει έκκριση.	

Έχετε κάνει ποτέ μαστογραφία; (Βάλτε √ μόνο στην απάντηση που ταιριάζει στην περίπτωση σας)

Ναι	
Όχι	

**ΜΗ ΔΕΝ ΕΧΕΤΕ ΕΠΙΧΕΙΡΗΣΕΙ ΠΟΤΕ ΝΑ ΚΑΝΕΤΕ ΑΥΤΟΕΞΕΤΑΣΗ ΜΑΣΤΟΥ, ΠΑΡΑΚΑΛΩ  
ΑΠΑΝΤΗΣΤΕ ΤΙΣ ΕΡΩΤΗΣΕΙΣ 5. ΚΑΙ 6. Σ' ΑΥΤΗ ΤΗ ΣΕΛΙΔΑ**

Βάλτε √ σε όσα από τα παρακάτω βήματα πιστεύετε ότι οι γυναίκες γενικά θα έπρεπε να ακολουθούν, όταν κάνουν αυτοεξέταση μαστού (Μπορείτε να βάλετε √ σε περισσότερα από ένα βήματα)

Εξετάζετε το στήθος, όταν κάνετε μπάνιο ή ντους.	
Λοιτάζετε το στήθος στον καθρέφτη προσεχτικά, έχοντας τα χέρια στη μέση.	
Λοιτάζετε το στήθος στον καθρέφτη προσεχτικά με τα χέρια πίσω από το κεφάλι.	
Λοιτάζετε το στήθος στον καθρέφτη προσεχτικά, έχοντας τα χέρια στην περιφέρεια.	
Λοιτάζετε το στήθος στον καθρέφτη προσεχτικά, για να δείτε αν υπάρχει κάποιο πρήξιμο, ερμιακή ανωμαλία ή αλλαγές στην εμφάνιση της θηλής.	
Ψειλαφείτε το στήθος, όταν βρίσκεστε ξαπλωμένη.	
Ξαπλώνετε, βάζετε το ένα χέρι πάνω από το κεφάλι και εξετάζετε το στήθος σ' αυτή την πλευρά.	
Ξαπλώνετε, τοποθετείτε μια διπλωμένη πετσέτα ή ένα μαξιλάρι κάτω από τον ένα ώμο και εξετάζετε το στήθος σ' αυτή την πλευρά.	
Χρησιμοποιείτε το δεξί χέρι για να εξετάσετε το αριστερό στήθος και το αριστερό χέρι για να εξετάσετε το δεξί στήθος.	
Εξετάζετε το στήθος με κυκλικές κινήσεις, ακολουθώντας τη φορά των δεικτών του ρολογιού και αρχίζοντας από έξω προς τα μέσα.	
Όταν εξετάζετε το στήθος, ψειλαφείτε προσεκτικά, ψάχνοντας για ογκίδια ή σκληρά σημεία.	
Πιέζετε ελαφρά τη θηλή σε κάθε στήθος, για να δείτε αν υπάρχει έκκριση.	

Έχετε κάνει ποτέ μαστογραφία; (Βάλτε √ μόνο στην απάντηση που ταιριάζει στην περίπτωσή σας)

Ναι	
Όχι	

## ΜΕΡΟΣ ΠΕΜΠΤΟ

Κάτω ακολουθούν κάποιες προτάσεις σχετικά με την υγεία του στήθους και άλλα θέματα υγείας.   
 Πιθανά να έχετε μία από τις προτάσεις βάλτε σε κύκλο το νούμερο που δείχνει πόσο συμφωνείτε ή διαφωνείτε με   
 την πρόταση.

- 1 = Διαφωνώ εντελώς  
 2 = Διαφωνώ  
 3 = Συμφωνώ  
 4 = Συμφωνώ εντελώς

Είναι πιο ευάλωτη στον καρκίνο του μαστού, σε σχέση με άλλες ασθένειες.	1	2	3	4
Ο καρκίνος του μαστού είναι η πιο σοβαρή ασθένεια που θα μπορούσε να μου συμβεί,	1	2	3	4
Η αυτοεξέταση μαστού μπορεί να με κάνει να νιώσω αμηχανία ή/και ντροπή.	1	2	3	4
Να κάνω αυτοεξέταση μαστού είναι σαν να αρχίζω μια καινούργια συνήθεια, η οποία μου φαίνεται δύσκολο.	1	2	3	4
Πιστεύω ότι η συστηματική σωματική άσκηση (τουλάχιστον τρεις φορές την εβδομάδα) μου κάνει καλό.	1	2	3	4
Να θεωρώ και πολύ πιθανό να αναπτύξω καρκίνο του μαστού κάποια στιγμή στη ζωή μου.	1	2	3	4
Αν είχα προβλήματα με τη συγκοινωνία δεν θα πήγαινα να κάνω μαστογραφία.	1	2	3	4
Αν παρουσίαζα καρκίνο του μαστού, αυτό θα είχε πολύ αρνητικές επιπτώσεις στη ζωή μου μέσα ή έξω από το σπίτι.	1	2	3	4
Αν κάνω μια φορά μαστογραφία και βγει καθαρή, δεν χρειάζεται να ανησυχώ για το μέλλον μου από κει και πέρα.	1	2	3	4
Η αυτοεξέταση μαστού αυξάνει τις πιθανότητες για μια αποτελεσματική θεραπεία και πρόληψη για τις γυναίκες που αναπτύσσουν καρκίνο του μαστού.	1	2	3	4
Αν η αυτοεξέταση μαστού γινόταν από περισσότερες γυναίκες, θα μειωνόταν οι θάνατοι που οφείλονται στον καρκίνο του μαστού.	1	2	3	4
Πηγαίνω συχνά στον οδοντίατρο και για έναν προληπτικό έλεγχο αλλά και για να αντιμετωπιστούν τα κρυμμένα προβλήματα.	1	2	3	4
Η αυτοεξέταση μαστού είναι χρονοβόρα διαδικασία και με απασχολεί από άλλες δραστηριότητες.	1	2	3	4
Αν υπάρχουν τόσα άλλα πράγματα που θα μπορούσαν να μου συμβούν, που μοιάζει να μην μπορώ να σκέφτομαι το ενδεχόμενο να πάθω καρκίνο του μαστού.	1	2	3	4
Εχω μεγαλύτερες πιθανότητες να αναπτύξω καρκίνο του μαστού σε σχέση με άλλες γυναίκες.	1	2	3	4
Αν ανησυχώ πολύ μήπως πάθω καρκίνο του μαστού.	1	2	3	4
Πιστεύω ότι ο καρκίνος του μαστού μπορεί να θεραπευτεί εύκολα.	1	2	3	4
Η αυτοεξέταση μαστού μπορεί να δημιουργήσει ανησυχίες και να προκαλέσει ψυχολογική πίεση.	1	2	3	4
Με απασχολεί ότι η μαστογραφία μπορεί να πονέσει ή να προκαλέσει ενόχληση.	1	2	3	4
Η μαστογραφία μειώνει τις πιθανότητες να χρειαστεί ριζική αντιμετώπιση ή χειρουργική επέμβαση που θα αφήσει σωματική δυσμορφία στη γυναίκα που πάσχει από καρκίνο του μαστού.	1	2	3	4

- 1 = Διαφωνώ εντελώς  
 2 = Διαφωνώ  
 3 = Συμφωνώ  
 4 = Συμφωνώ εντελώς

Η αυτοεξέταση μαστού βοηθάει στην έγκαιρη διάγνωση και επομένως μειώνει τη πρόβλεψη της απαιτούμενης θεραπείας για τις γυναίκες που αναπτύσσουν καρκίνο του μαστού.	1	2	3	4
Με απασχολεί η ακτινοβολία από τη μαστογραφία.	1	2	3	4
Η αυτοεξέταση μαστού με κάνει να νιώθω ότι έχω τον έλεγχο σε σχέση με την υγεία μου.	1	2	3	4
Κάνω συχνά τεστ - Παπανικολάου (τεστ - Παπ).	1	2	3	4
Η μαστογραφία θα μπορούσε να εντοπίσει τον καρκίνο του μαστού, πριν ακόμα εγώ ή ο/η γιατρός μου κάποιο ογκίδιο.	1	2	3	4
Η μαστογραφία μπορεί να με κάνει να νιώσω αμηχανία ή/και ντροπή.	1	2	3	4
Προσφεύγω να καπνίζω πολύ και να πίνω πολλά οινοπνευματώδη ποτά.	1	2	3	4
Όσο περνούν τα χρόνια σκέφτομαι όλο και περισσότερο ότι μπορεί να αναπτύξω καρκίνο του μαστού.	1	2	3	4
Μου ήταν δύσκολο να λείψω από τη δουλειά ή να αφήσω τις υποχρεώσεις μου πρότερα για να μπορέσω να πάω για μαστογραφία.	1	2	3	4
Ο καρκίνος του μαστού θα έβαζε σε κίνδυνο το γάμο μου (ή την ερωτική μου σχέση).	1	2	3	4
Συνήθως φοράω ζώνη ασφαλείας στο αυτοκίνητο.	1	2	3	4
Η μαστογραφία θα μπορούσε να εντοπίσει κάποια προβλήματα του στήθους σε πρώιμο στάδιο, όταν οι πιθανότητες για μια αποτελεσματική θεραπεία είναι πολύ μεγαλύτερες.	1	2	3	4
Ακολουθώ μια ισορροπημένη διατροφή.	1	2	3	4
Πιστεύω ότι ξέρω πώς να κάνω σωστά αυτοεξέταση μαστού.	1	2	3	4
Η μαστογραφία είναι σήμερα εξέταση ρουτίνας.	1	2	3	4
Ο καρκίνος του μαστού μπορεί να αφήσει τη γυναίκα με μια όχι και τόσο ελκυστική εξωτερική εμφάνιση.	1	2	3	4
Η αυτοεξέταση μαστού μπορεί να μου προσφέρει τη διαβεβαίωση ότι δεν υπάρχει κανένα πρόβλημα και να με καθησυχάσει.	1	2	3	4
Με τη μαστογραφία υπάρχει μεγάλος κίνδυνος να οδηγηθεί κανείς σε χειρουργική επέμβαση, χωρίς να είναι απαραίτητο.	1	2	3	4
Αν είχα καρκίνο του μαστού, θα μπορούσε να κλονιστεί η οικονομική μου κατάσταση.	1	2	3	4
Η μαστογραφία είναι απαραίτητο να γίνεται τακτικά, για να έχει ο/η γιατρός αρκετές πληροφορίες στο ιστορικό μου σε περίπτωση που εμφανιστεί κάποιο πρόβλημα.	1	2	3	4
Η αυτοεξέταση μαστού μπορεί να πονέσει.	1	2	3	4
Η αυτοεξέταση μαστού μπορεί να προλάβει μελλοντικά προβλήματα με το στήθος.	1	2	3	4
Πόσο θα μπορούσαν να σας επηρεάσουν οι παρακάτω πηγές στο να κάνετε αυτοεξέταση μαστού και να πάτε για μαστογραφία;				

Για κάθε μία από τις παρακάτω πηγές βάλτε σε κύκλο το νούμερο που δείχνει πόσο θα μπορούσε να σας επηρεάσει.

- 1 = Καθόλου
- 2 = Λίγο
- 3 = Αρκετά
- 4 = Πάρα πολύ

- |  |   |   |   |   |
|--|---|---|---|---|
| 43. Σχετικό άρθρο σε περιοδικό (-α) / εφημερίδα (-ες).   | 1 | 2 | 3 | 4 |
| 44. Σχετικό τηλεοπτικό πρόγραμμα (-τα).  | 1 | 2 | 3 | 4 |
| 45. Ενημερωτικό φυλλάδιο(-α).  | 1 | 2 | 3 | 4 |
| 46. Σύσταση από κάποιον ειδικό (γιατρό, νοσοκόμα κλπ.).  | 1 | 2 | 3 | 4 |
| 47. Το να έχει πάει για μαστογραφία κάποιο μέλος της οικογένειας/συγγενής/φίλη.                  | 1 | 2 | 3 | 4 |
| 48. Το να έχει χάσει τη ζωή της κάποια συγγενής / φίλη / δημόσιο πρόσωπο από καρκίνο του μαστού. | 1 | 2 | 3 | 4 |

Παρακάτω ζητάμε τη γνώμη σας για την υγεία γενικά. Βάλτε σε κύκλο το νούμερο που περιγράφει πόσο συμφωνείτε ή διαφωνείτε με καθεμία από τις προτάσεις.

- 1 = Συμφωνώ εντελώς
- 2 = Συμφωνώ
- 3 = Μάλλον συμφωνώ
- 4 = Μάλλον διαφωνώ
- 5 = Διαφωνώ
- 6 = Διαφωνώ εντελώς

- |  |   |   |   |   |   |   |
|--|---|---|---|---|---|---|
| 1. Αν δεν έχεις την υγεία σου δεν έχεις τίποτα.                                  | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. Υπάρχουν άλλα πράγματα που με απασχολούν περισσότερο από την υγεία μου.       | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. Η υγεία παίζει πολύ μικρό ρόλο στο να είναι κάποιος ευτυχισμένος στη ζωή του. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Δεν υπάρχει τίποτα πιο σημαντικό από την υγεία.                               | 1 | 2 | 3 | 4 | 5 | 6 |

## ΜΕΡΟΣ ΕΚΤΟ

αυτό το μέρος ενδιαφερόμαστε για τα αισθήματα και τα συναισθήματά σας.  
 παρακάτω κλίμακα αποτελείται από λέξεις που περιγράφουν διάφορα αισθήματα και συναισθήματα.  
 βάλτε σε κύκλο τον αριθμό που εκφράζει το πώς νιώθετε για κάθε λέξη τους τελευταίους μήνες.

1 = Πολύ Λίγο  
 2 = Λίγο  
 3 = Μέτρια  
 4 = Πολύ  
 5 = Πάρα Πολύ

ενδιαφέρουσα	1	2	3	4	5	11. ευέξαπτη	1	2	3	4	5
πεισμένη	1	2	3	4	5	12. σε εγρήγορση	1	2	3	4	5
συναρπαστική	1	2	3	4	5	13. ντροπιασμένη	1	2	3	4	5
ανήσυχη	1	2	3	4	5	14. με έμπνευση	1	2	3	4	5
δυνατή	1	2	3	4	5	15. νευρική	1	2	3	4	5
ένοχη	1	2	3	4	5	16. αποφασιστική	1	2	3	4	5
τρομαγμένη	1	2	3	4	5	17. επιμελής	1	2	3	4	5
εχθρική	1	2	3	4	5	18. αναστατωμένη	1	2	3	4	5
ενθουσιώδης	1	2	3	4	5	19. δραστήρια	1	2	3	4	5
περήφανη	1	2	3	4	5	20. φοβισμένη	1	2	3	4	5

## ΜΕΡΟΣ ΕΒΔΟΜΟ

Αυτό το τμήμα του ερωτηματολογίου μάς ενδιαφέρουν οι απόψεις σας για θέματα υγείας και οι τρόποι με τους οποίους αντιμετωπίζετε εσείς τα συνηθισμένα και καθημερινά προβλήματα υγείας.

Για κάθε μία από τις παρακάτω προτάσεις βάλτε σε κύκλο το νούμερο που δείχνει πόσο συμφωνείτε ή διαφωνείτε με την πρόταση. Δεν υπάρχουν σωστές και λάθος απαντήσεις.

- 1 = Συμφωνώ εντελώς
- 2 = Συμφωνώ
- 3 = Μάλλον συμφωνώ
- 4 = Μάλλον διαφωνώ
- 5 = Διαφωνώ
- 6 = Διαφωνώ εντελώς

1. Αν αρρωστήσω, είναι η δική μου συμπεριφορά που καθορίζει πόσο γρήγορα θα γίνω καλά.	1	2	3	4	5	6
2. Ό,τι και να κάνω, δεν γίνεται να μην αρρωστήσω.	1	2	3	4	5	6
3. Το να πηγαίνω συχνά στο γιατρό, είναι ο καλύτερος τρόπος για να αποφύγω τις ασθένειες.	1	2	3	4	5	6
4. Τα περισσότερα πράγματα που επηρεάζουν την υγεία μου είναι τυχαία.	1	2	3	4	5	6
5. Όταν δεν νιώθω καλά στην υγεία μου, πρέπει να συμβουλευτώ το γιατρό.	1	2	3	4	5	6
6. Έχω την υγεία μου κάτω από τον έλεγχό μου.	1	2	3	4	5	6
7. Στο αν θα αρρωστήσω ή όχι η οικογένειά μου παίζει μεγάλο ρόλο.	1	2	3	4	5	6
8. Όταν αρρωσταίνω, το σφάλμα είναι αποκλειστικά δικό μου.	1	2	3	4	5	6
9. Η τύχη παίζει καθοριστικό ρόλο στο πόσο γρήγορα αναρρώνω από μία ασθένεια.	1	2	3	4	5	6
10. Οι γιατροί έχουν τον απόλυτο έλεγχο πάνω στην υγεία μου.	1	2	3	4	5	6
11. Το να διατηρούμαι σε καλή υγεία είναι καθαρά θέμα τύχης.	1	2	3	4	5	6
12. Ο σημαντικότερος παράγοντας που επηρεάζει την υγεία μου είναι αυτά που κάνω εγώ η ίδια.	1	2	3	4	5	6
13. Αν φροντίζω την υγεία μου, μπορώ να αποφύγω τις ασθένειες.	1	2	3	4	5	6
14. Η ανάρρωσή μου από μια ασθένεια οφείλεται στη φροντίδα κάποιων άλλων ανθρώπων (π.χ. γιατρών, νοσοκόμων, μελών της οικογένειας, φίλων).	1	2	3	4	5	6
15. Ό,τι και να κάνω, υπάρχει πάντα η πιθανότητα να αρρωστήσω.	1	2	3	4	5	6
16. Αν είναι γραφτό να παραμείνω υγιής, θα παραμείνω.	1	2	3	4	5	6
17. Αν πάρω τα κατάλληλα μέτρα, μπορώ να παραμείνω υγιής.	1	2	3	4	5	6
18. Όσον αφορά στην υγεία μου, το μόνο που μπορώ να κάνω είναι να ακολουθώ τις συμβουλές του γιατρού.	1	2	3	4	5	6

παρακάτω προτάσεις έχουν να κάνουν με το πώς εσείς αντιμετωπίζετε τα συνηθισμένα και καθημερινά προβλήματα με την υγεία σας.

Κάθε πρόταση βάλτε σε κύκλο το νούμερο που δείχνει πόσο πολύ ή λίγο χρησιμοποιείτε αυτούς τους τρόπους.

- 1 = Σχεδόν ποτέ
- 2 = Σπάνια
- 3 = Μερικές φορές
- 4 = Σχεδόν πάντα

**ΤΑΝ ΕΧΩ ΝΑ ΑΝΤΙΜΕΤΩΠΙΣΩ ΣΥΝΗΘΙΣΜΕΝΑ Ή ΚΑΘΗΜΕΡΙΝΑ ΠΡΟΒΛΗΜΑΤΑ ΜΕ ΤΗΝ ΥΓΕΙΑ ΜΟΥ ...**

Νιώθω μεγάλη συναισθηματική πίεση και αφήνω τα συναισθήματά μου να ξαπλώσουν.	1	2	3	4
Προσπαθώ να πάρω συναισθηματική υποστήριξη από συγγενείς και φίλους.	1	2	3	4
Πίνω ή παίρνω φάρμακα ή/και ναρκωτικά, για να μην το σκέφτομαι.	1	2	3	4
Αποθαρσύνω να ζω με το πρόβλημα.	1	2	3	4
Προσπαθώ να ξεχαστώ για λίγο πίνοντας οινοπνευματώδη ή παίρνοντας φάρμακα ή/και ναρκωτικά.	1	2	3	4
Αναγκεντρώνομαι και προσπαθώ να κάνω κάτι.	1	2	3	4
Αναστατώνομαι όταν σκέφτομαι αυτό που έπαθα.	1	2	3	4
Προσποιούμαι ότι δεν έχει συμβεί στ' αλήθεια.	1	2	3	4
Κάνω ό,τι χρειάζεται να γίνει, προχωρώντας σταδιακά.	1	2	3	4
Πίνω αλκοόλ και παίρνω φάρμακα ή/και ναρκωτικά για μην σκέφτομαι το πρόβλημα και τόσο πολύ.	1	2	3	4
Αναστατώνομαι και το ξέρω.	1	2	3	4
Κάνω ακόμα περισσότερες προσπάθειες για να απαλλαγώ από το πρόβλημα.	1	2	3	4
Μιλώ με κάποιον για το πώς νιώθω.	1	2	3	4
Πίνω αλκοόλ και παίρνω φάρμακα ή/και ναρκωτικά για να νιώσω καλύτερα.	1	2	3	4
Παραδέχομαι πως ό,τι έγινε έγινε και πως δεν μπορεί να αλλάξει.	1	2	3	4
Ζητώ με κάποιον για τα συναισθήματά μου.	1	2	3	4
Αρνούμαι να πιστέψω αυτό που μου έχει συμβεί.	1	2	3	4
Ταραζομαι και αφήνω τα συναισθήματά μου να ξεσπάσουν.	1	2	3	4
Βρίσκω κατανόηση και συμπόνοια από κάποιον άλλο.	1	2	3	4
Κάνω οργανωμένες προσπάθειες για να λύσω το πρόβλημα.	1	2	3	4
Αφήνω τα συναισθήματά μου να ξεσπάσουν.	1	2	3	4
Φέρομαι σαν να μη συμβαίνει τίποτα.	1	2	3	4
Λέω στον εαυτό μου "δεν μπορεί να είναι αλήθεια".	1	2	3	4
Παραδέχομαι ότι αυτό που μου συμβαίνει είναι πραγματικό.	1	2	3	4



Από ποιον έχετε πάρει πληροφορίες για την  
 προεξέταση μαστού;  
 Βάλτε ✓ στις απαντήσεις που ταιριάζουν  
 στην περίπτωση σας. Μπορείτε να βάλετε ✓ σε  
 περισσότερες από μία απαντήσεις).

Φιλικά / συγγενικά πρόσωπα	
Προσωπικός (οικογενειακός) γιατρός	
Νοσοκόμα / Μαία	
Τηλεοπτική εκπομπή	
Περιοδικά / εφημερίδες	
Φυλλάδια	
Από άλλον (ποιον;.....)	
Δεν θυμάμαι	

Από ποιον έχετε πάρει πληροφορίες για τη  
 μαστογραφία;  
 (Βάλτε ✓ στις απαντήσεις που ταιριάζουν στην  
 περίπτωση σας. Μπορείτε να βάλετε ✓ σε  
 περισσότερες από μία απαντήσεις).

Φιλικά / συγγενικά πρόσωπα	
Προσωπικός (οικογενειακός) γιατρός	
Νοσοκόμα / Μαία	
Τηλεοπτική εκπομπή	
Περιοδικά / εφημερίδες	
Φυλλάδια	
Από άλλον (ποιον;.....)	
Δεν θυμάμαι	

Αν έχετε να κάνετε επιπλέον σχόλια, παρακαλώ χρησιμοποιήστε τις παρακάτω γραμμές.

.....

.....

.....

.....

**ΕΥΧΑΡΙΣΤΩ ΓΙΑ ΤΗ ΣΥΝΕΡΓΑΣΙΑ**

**Appendix IV:**

**Information letter and questionnaire used for the assessment of  
Screening Mammography Attenders in Scotland**



# UNIVERSITY OF STIRLING

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## PARTICIPANT INFORMATION LETTER

Dear Participant,

We would like to invite you to take part in a research project being carried out at Stirling University, by completing a short questionnaire on knowledge and attitudes towards breast screening. The project has been funded by the European Economic Community and aims to compare the attitudes of women in Scotland with women in Greece.

We would like to stress that the study is **completely anonymous**. The questionnaire is confidential and **at no time will researchers have access to your name, or any data which could identify you.**

**Please note that completion of THIS QUESTIONNAIRE IS NOT PART OF THE SCOTTISH BREAST SCREENING PROGRAM and it is your decision whether to complete it or not.**

If you agree to take part in this research, we would be grateful if you could complete this questionnaire and return it in the prepaid envelope provided. It should take no more than 5 or 10 minutes to complete.

If you have any queries about any aspects of this research study, please do not hesitate to contact any member of the research team at the above address. We hope that the results will be useful to these planning breast screening services for women in the future.

Many thanks in advance for your help with this research.

Yours sincerely

Professor KG Power, Professor of Clinical Psychology  
Dr V Swanson, Lecturer and Research Administrator  
Ms Zoe Chouliara, Postgraduate Researcher

**This questionnaire is about breast screening and health issues in general. We are interested in your attitudes and beliefs about breast screening and health issues. There are no right or wrong answers, so feel free to choose those answers that best apply to you.**

**PART ONE: PERSONAL DETAILS RECORD SHEET**

1. Age ----- (in years)

2. State the highest level of education you have reached.....

3. Marital Status (Please tick one)

	(tick)
Married / Cohabiting	
Divorced / Separated	
Widowed	
Never married / Single	

4. Number of children (Please tick one)

	(tick)
None	
One	
Two	
Three	
More than three	

5. Please specify your ethnic group:.....

(e.g. British, German, Chinese, Greek etc.)

**PART TWO: KNOWLEDGE RECORD SHEET I**

This part of the questionnaire looks at your knowledge in relation to breast checks and breast problems.

1. A woman is more likely to develop breast cancer if she:

(Tick as many as you feel appropriate)

	(tick)
is single	
has been married, but has no children	
has been married and has had children	
has had a hysterectomy	
has relatives who have had breast cancer	
is past menopause	
takes birth control pills	
has been hit in the breast	
have no idea	

2. On average, the chances of a woman developing breast cancer become substantially greater after she passes which birthday? (Tick one)

	(tick)
20 <sup>th</sup>	
30 <sup>th</sup>	
40 <sup>th</sup>	
50 <sup>th</sup>	
60 <sup>th</sup>	
have no idea	

3. Most lumps discovered in the breast turn out to be cancer (Tick one)

	(tick)
Yes	
No	
Have no idea	

4. Is there a history of breast cancer in your close family (mother, sister, aunt) ? (Tick one)

	(tick)
Yes	
No	
Have no idea	

### PART THREE: KNOWLEDGE RECORD SHEET II

This part looks at your knowledge of breast screening and mammography (mammogram).

Below there are some statements about screening mammography. Please indicate whether you think they are true or false. (Tick as appropriate).

	TRUE	FALSE	DO NOT KNOW
Mammography will detect a lot of non- cancerous breast problems, some of which may never have been detected otherwise.			
If a woman has one clear mammogram, no more mammograms are needed.			
Mammography can find breast cancer up to two years before the woman herself or her doctor can feel a lump or notice any breast change.			
Mammography is more accurate in younger women.			

### PART FOUR: ATTITUDES AND BELIEFS

Below is a series of statements about your beliefs towards breast awareness and other health issues. Please circle the number for each statement, which best represents how strongly you agree or disagree with each of the statements.

- 1= Strongly Disagree
- 2= Somewhat Disagree
- 3= Somewhat Agree
- 4= Strongly Agree

1. I had trouble with transportation to come and be screened today. 1   2   3   4
2. Before I came to be screened today, I was worried that I might have pain or discomfort from the mammogram. 1   2   3   4
3. Before I came to be screened today, I was worried about the radiation from a mammogram. 1   2   3   4
4. Before I came to be screened today, I was worried that having a mammogram could be embarrassing. 1   2   3   4
5. I found it difficult to take time off work or (if you don't work) to leave home demands behind, so I could come for screening today. 1   2   3   4
6. Before I came to be screened today, I was worried that mammograms have a high risk of leading to surgery that is not needed. 1   2   3   4

The following statements are about your opinion on health generally. Please circle the numbers which best represent how strongly you agree or disagree with each of these statements.

- 1 = Strongly Agree
- 2 = Moderately Agree
- 3 = Slightly Agree
- 4 = Slightly Disagree
- 5 = Moderately Disagree
- 6 = Strongly Disagree

- |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| 1. If you don't have your health, you don't have anything.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. There are many things I care about more than my health.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. Good health is only of minor importance in a happy life. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. There is nothing more important than good health.        | 1 | 2 | 3 | 4 | 5 | 6 |

### PART FIVE: HEALTH RELATED VIEWS AND COPING

People differ in the way they make decisions about their health. Please indicate how you make decisions about your health (e.g. to go and see your doctor or not, to do breast checks or not, to go for breast screening or not, to start a more balanced diet or not, to take up exercise or not, to go for a cervical smear test or not etc.) by ticking for each question the response which best describes your usual style.

- 1 = I usually don't do this at all
- 2 = I usually do this a little bit
- 3 = I usually do this a medium amount
- 4 = I usually do this a lot

**When making decisions about my health...**

- |  |   |   |   |   |
|--|---|---|---|---|
| 1. I take a lot of care before choosing.   | 1 | 2 | 3 | 4 |
| 2. After a decision is made I spend a lot of time convincing myself it was correct.        | 1 | 2 | 3 | 4 |
| 3. When I have to make a decision I wait a long time before starting to think about it.    | 1 | 2 | 3 | 4 |
| 4. I prefer to leave decisions to others.  | 1 | 2 | 3 | 4 |
| 5. I try to be clear about my objectives before choosing.                                  | 1 | 2 | 3 | 4 |
| 6. I feel as if I am under tremendous time pressure when making decisions.                 | 1 | 2 | 3 | 4 |
| 7. If a decision can be made by me or another person I let the other person make it.       | 1 | 2 | 3 | 4 |
| 8. I avoid making decisions.   | 1 | 2 | 3 | 4 |
| 9. I put off making decisions.   | 1 | 2 | 3 | 4 |
| 10. Whenever I face a difficult decision I feel pessimistic about finding a good solution. | 1 | 2 | 3 | 4 |
| 11. I try to find out the disadvantages of all alternatives.                               | 1 | 2 | 3 | 4 |
| 12. I delay making decisions until it is too late.   | 1 | 2 | 3 | 4 |

In this last section of the questionnaire we are interested in the way you confront regular (e.g. having asthma, high blood pressure) and common health problems (e.g. having the flue, cold, occasional headaches). For each item circle the number that represents the extent to which you use it. Please make sure that you answer every item and that you circle only one number per item.

- 1= I usually don't do this at all
- 2= I usually do this a little bit
- 3= I usually do this a medium amount
- 4= I usually do this a lot

- |  |   |   |   |   |
|--|---|---|---|---|
| 1. I feel a lot of emotional distress and I find myself expressing those feelings a lot. | 1 | 2 | 3 | 4 |
| 2. I try to get emotional support from friends or relatives.                             | 1 | 2 | 3 | 4 |
| 3. I learn to live with it.  | 1 | 2 | 3 | 4 |
| 4. I try to lose myself for a while by drinking alcohol or taking drugs.                 | 1 | 2 | 3 | 4 |
| 5. I concentrate my efforts on doing something about it.                                 | 1 | 2 | 3 | 4 |
| 6. I drink alcohol or take drugs, in order to think about it less.                       | 1 | 2 | 3 | 4 |
| 7. I talk to someone about how I feel.   | 1 | 2 | 3 | 4 |
| 8. I accept that this has happened and that it can't be changed.                         | 1 | 2 | 3 | 4 |
| 9. I get upset and let emotions out.   | 1 | 2 | 3 | 4 |
| 10. I take direct action to get around the problem.                                      | 1 | 2 | 3 | 4 |
| 11. I act as though it hasn't really happened.   | 1 | 2 | 3 | 4 |
| 12. I say to myself "this isn't real".   | 1 | 2 | 3 | 4 |

**Apart from today, have you ever received an invitation for the Breast Screening Program in the past? (Tick only the one that applies to you)**

	(tick)
I have received an invitation for the National Breast Screening Program in the past	
I have never received an invitation for the National Breast Screening Program in the past	
I do not remember	

**Please tick only the one that describes your situation.**

	(tick)
This is the first time I have attended the National Breast Screening Program	
This is the second time I have attended the National Breast Screening Program	
This is the third time I have attended the National Breast Screening Program	
This is the ..... time I have attended the National Breast Screening Program (Please specify)	

**Thank for your time and trouble to complete this questionnaire.**

**Could you please check that you have answered all questions.**

**If you have any queries, regarding the present research, please contact Dr Vivien Swanson in the Anxiety and Stress Research Centre (Dept. of Psychology: 3A96, Telephone Number: 01786 467685).**

**If, after completing this questionnaire, you have any worries or you require more information and support in relation to breast problems, you can call Breast Cancer Care - Nationwide Freeline 0500 245 345 or Cancerlink 0131 228 5557.**

**Appendix V:**

**Information letter and questionnaire used for the assessment of  
Screening Mammography Non-Attenders in Scotland**





# UNIVERSITY OF STIRLING

STIRLING FK9 4LA SCOTLAND  
TELEPHONE 01786 473171

FACULTY OF HUMAN SCIENCES  
DEPARTMENT OF PSYCHOLOGY

Telephone 01786 467640  
Facsimile 01786 467641  
International Code +44 1786

## PATIENT INFORMATION LETTER

Dear Patient

We are writing to ask for your help with a research project being carried out at Stirling University, by completing a short questionnaire on knowledge and attitudes towards breast screening. The project has been funded by the European Economic Community and aims to compare the attitudes of women in Scotland with women in Greece.

Because she has a special interest in women's health, Dr Fiona Johnstone from Bridge of Allan Health Centre has kindly agreed that we can enclose the questionnaires with her own correspondence to you. Since our questionnaire asks some questions about breast screening we would also be grateful if you could fill it in before you read the information leaflet sent to you by Dr Johnstone in the separate envelope.

However, we would like to stress that the study is **completely anonymous**. The questionnaire is confidential and **at no time will researchers have access to your name, or any data which could identify you.**

If you agree to take part in this research, we would be grateful if you could complete the enclosed questionnaire and return it directly to us at Stirling University in the FREEPOST envelope provided within the next two weeks (no stamp is required). It should take no more than 5 or 10 minutes to complete.

If you have any queries about any aspects of this research study, please do not hesitate to contact any member of the research team at the above address, or contact Dr Johnstone. We hope that the results will be interesting. We will make the results of the study available to Dr Johnstone and Bridge of Allan Practice as soon as possible, and they will be available to you on request.

Many thanks in advance for your help with this research.

Yours sincerely

Professor KG Power, Professor of Clinical Psychology  
Dr V Swanson, Lecturer and Research Administrator  
Ms Zoe Chouliara, Postgraduate Researcher.

# BREAST SCREENING QUESTIONNAIRE

## PART ONE: KNOWLEDGE RECORD SHEET I

This part of the questionnaire looks at your knowledge in relation to breast checks and breast problems.

1. A woman is more likely to develop breast cancer if she:  
(Tick as many as you feel appropriate)

	(tick)
is single	
has been married, but has no children	
has been married and has had children	
has had a hysterectomy	
has relatives who have had breast cancer	
is past menopause	
takes birth control pills	
has been hit in the breast	
have no idea	

2. On average, the chances of a woman developing breast cancer become substantially greater after she passes which birthday? (Tick one)

	(tick)
20 <sup>th</sup>	
30 <sup>th</sup>	
40 <sup>th</sup>	
50 <sup>th</sup>	
60 <sup>th</sup>	
have no idea	

3. Most lumps discovered in the breast turn out to be cancer (Tick one)

	(tick)
Yes	
No	
Have no idea	

4. Is there a history of breast cancer in your close family (mother, sister, aunt)? (Tick one)

	(tick)
Yes	
No	
Have no idea	

## PART TWO: KNOWLEDGE RECORD SHEET II

This part looks at your knowledge of breast screening and mammography (mammogram).

Below there are some statements about screening mammography. Please indicate whether you think they are true or false. (Tick as appropriate).

	TRUE	FALSE	DO NOT KNOW
Mammography will detect a lot of non-cancerous breast problems, some of which may never have been detected otherwise.			
If a woman has one clear mammogram, no more mammograms are needed.			
Mammography can find breast cancer up to two years before the woman herself or her doctor can feel a lump or notice any breast change.			
Mammography is more accurate in younger women.			

# BREAST SCREENING QUESTIONNAIRE

## PART THREE: ATTITUDES AND BELIEFS

Below is a series of statements about your beliefs towards breast awareness and other health issues. Please circle the number for each statement which best represents how strongly you agree or disagree with each of the statements.

- 1= Strongly Disagree
- 2= Somewhat Disagree
- 3= Somewhat Agree
- 4= Strongly Agree

- |  |   |   |   |   |
|--|---|---|---|---|
| 1. Trouble with transportation would keep me from having a mammogram.  | 1 | 2 | 3 | 4 |
| 2. I worry that I might have pain or discomfort from a mammogram.  | 1 | 2 | 3 | 4 |
| 3. I worry about the radiation from a mammogram.   | 1 | 2 | 3 | 4 |
| 4. Having a mammogram could be embarrassing.   | 1 | 2 | 3 | 4 |
| 5. I could have difficulties to take time off work or (if you don't work) to leave the people I take care of at home, so I can go for screening. | 1 | 2 | 3 | 4 |
| 6. Mammograms have a high risk of leading to surgery that is not needed.   | 1 | 2 | 3 | 4 |

The following statements are about your opinion on health generally. Please circle the numbers which best represent how strongly you agree or disagree with each of these statements.

- 1 = Strongly Agree
- 2 = Moderately Agree
- 3 = Slightly Agree
- 4 = Slightly Disagree
- 5 = Moderately Disagree
- 6 = Strongly Disagree

- |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| 1. If you don't have your health, you don't have anything.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. There are many things I care about more than my health.  | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. Good health is only of minor importance in a happy life. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. There is nothing more important than good health.        | 1 | 2 | 3 | 4 | 5 | 6 |

# BREAST SCREENING QUESTIONNAIRE

## PART FOUR: HEALTH RELATED VIEWS AND COPING

People differ in the way they make decisions about their health. Please indicate how you make decisions about your health (e. g. to go and see your doctor or not, to do breast checks or not, to go for breast screening or not, to start a more balanced diet or not, to take up exercise or not, to go for a cervical smear test or not etc.) by ticking for each question the response which best describes your usual style.

**1 = I usually don't do this at all**

**2 = I usually do this a little bit**

**3 = I usually do this a medium amount**

**4 = I usually do this a lot**

### When making decisions about my health...

- |  |   |   |   |   |
|--|---|---|---|---|
| 1. I take a lot of care before choosing.   | 1 | 2 | 3 | 4 |
| 2. After a decision is made I spend a lot of time convincing myself it was correct.        | 1 | 2 | 3 | 4 |
| 3. When I have to make a decision I wait a long time before starting to think about it.    | 1 | 2 | 3 | 4 |
| 4. I prefer to leave decisions to others.  | 1 | 2 | 3 | 4 |
| 5. I try to be clear about my objectives before choosing.                                  | 1 | 2 | 3 | 4 |
| 6. I feel as if I am under tremendous time pressure when making decisions.                 | 1 | 2 | 3 | 4 |
| 7. If a decision can be made by me or another person I let the other person make it.       | 1 | 2 | 3 | 4 |
| 8. I avoid making decisions.   | 1 | 2 | 3 | 4 |
| 9. I put off making decisions.   | 1 | 2 | 3 | 4 |
| 10. Whenever I face a difficult decision I feel pessimistic about finding a good solution. | 1 | 2 | 3 | 4 |
| 11. I try to find out the disadvantages of all alternatives.                               | 1 | 2 | 3 | 4 |
| 12. I delay making decisions until it is too late.   | 1 | 2 | 3 | 4 |

# BREAST SCREENING QUESTIONNAIRE

In this last section of the questionnaire we are interested in the way you confront regular and common health problems. For each item circle the number that represents the extent to which you use it. Please make sure that you answer every item and that you circle only one number per item.

- 1= I usually don't do this at all
- 2= I usually do this a little bit
- 3= I usually do this a medium amount
- 4= I usually do this a lot

- |  |   |   |   |   |
|--|---|---|---|---|
| 1. I feel a lot of emotional distress and I find myself expressing those feelings a lot. | 1 | 2 | 3 | 4 |
| 2. I try to get emotional support from friends or relatives.                             | 1 | 2 | 3 | 4 |
| 3. I learn to live with it.  | 1 | 2 | 3 | 4 |
| 4. I try to lose myself for a while by drinking alcohol or taking drugs.                 | 1 | 2 | 3 | 4 |
| 5. I concentrate my efforts on doing something about it.                                 | 1 | 2 | 3 | 4 |
| 6. I drink alcohol or take drugs, in order to think about it less.                       | 1 | 2 | 3 | 4 |
| 7. I talk to someone about how I feel.   | 1 | 2 | 3 | 4 |
| 8. I accept that this has happened and that it can't be changed.                         | 1 | 2 | 3 | 4 |
| 9. I get upset and let emotions out.   | 1 | 2 | 3 | 4 |
| 10. I take direct action to get around the problem.                                      | 1 | 2 | 3 | 4 |
| 11. I act as though it hasn't really happened.   | 1 | 2 | 3 | 4 |
| 12. I say to myself "this isn't real".   | 1 | 2 | 3 | 4 |

**Please could you tell us why you did not attend your last invitation for the National Screening Programme.**

.....  
.....  
.....

**If you have any additional comment you would like to make, please do so in the space provided.....**

.....

**Thank for your time and trouble to complete this questionnaire.**

**Could you please check that you have answered all questions.**

**If you have any queries, regarding the present research, please contact Dr Vivien Swanson in the Anxiety and Stress Research Centre (Dept. of Psychology: 3A96, Telephone Number: 01786 467685).**

**If, after completing this questionnaire, you have any worries or you require more information and support in relation to breast problems, you can call Breast Cancer Care - Nationwide Freeline 0500 245 345 or Cancerlink 0131 228 5557.**

**Appendix VI:**

**Demographics Record Sheet used for the assessment of  
Screening Mammography Non-Attenders in Scotland**

DEMOGRAPHICS RECORD SHEET

1. AGE (in years): .....

2. EDUCATIONAL LEVEL

	(tick)
No education at all	
Basic education	
College	
University degree	
Postgraduate degree	

2. OCCUPATION: .....

3. MARITAL STATUS

	(tick)
Married/ Cohabiting	
Divorced/ Separated	
Widowed	
Never married/ Single	

4. PARITY

	(tick)
No children	
One child	
Two children	
Three children	
More than three children	

5. ETHNIC ORIGIN: .....

6. PERSONAL HISTORY OF BREAST DISEASE (benign or malignant)

	(tick)
Yes	
No	

IF "YES", STATE WHAT KIND OF BREAST DISEASE .....

7. FAMILY HISTORY OF BREAST CANCER

	(tick)
Yes	
No	

IF "YES", STATE THE MEMBER OF THE FAMILY (e.g. mother) .....

8. IS SHE A SMOKER?

	(tick)
Yes	
No	

IF "YES", HOW MANY CIGARETTES PER DAY .....

9. DOES SHE DRINK ALCOHOL?

	(tick)
Yes	
No	

IF "YES", HOW MANY UNITS PER WEEK .....

**Appendix VII:**

**General Practitioner's letter that accompanied set of scales used for  
the assessment of Screening Mammography Non-Attenders in  
Scotland**





Professor R J SIMPSON  
M.B. Ch.B. DPM. F.R.C.Psych. D.S.H.E.C.

R FAIRLEY  
M.B. Ch.B. F.R.C.G.P. D.R.C.O.G. C.I.H.

A B STUART  
M.B. B.Chir. D.R.C.O.G. B.Sc. (Hons)

FIONA M JOHNSTONE  
M.B. Ch.B. M.R.C.G.P. B.Sc.

*Bridge of Allan Health Centre*

FOUNTAIN ROAD • BRIDGE OF ALLAN • FK9 4EU

Tel: 01786 833210 Fax No: 01786 832322 GP Fundholding Code: SVB01 Practice Code V2510 1

PRACTICE MANAGER:  
MISS ANN TAGGART  
FMJ/RP

Dear Mrs

I am writing to inform you about the local breast screening service. This service uses mammography which is a reliable way of diagnosing breast cancer. It is a good method for detecting breast cancer early.

Mammography screening in Stirling began in 1992. It comes round every three years. Women in the age group 50-64 are automatically invited.

I note you have not attended screening either in 1992 or 1995. I would like to encourage you to do so this time.

You will be hearing from the Breast Screening Service in the next few weeks.

Should you wish to discuss this further please contact, either by phone or appointment, myself, your own GP or our Practice Nurse.

The Practice is taking part in a research study with Stirling University investigating women's attitudes towards breast problems. I would be grateful if you could consider returning the enclosed questionnaire which is completely anonymous and confidential.

Thank you.

Yours faithfully

DR FIONA M JOHNSTONE

**Appendix VIII:**

**Reminder letter used in Screening Mammography Non-Attendees in  
Scotland**

## **REMINDER LETTER**

Dear Mrs

The Practice is taking part in a research study with Stirling University investigating women's attitudes towards breast problems. A couple of weeks ago, a questionnaire was sent to you, asking your assistance with this research study.

Since the questionnaire was anonymous and confidential we are not in the position to know whether you have completed and returned the questionnaire or not.

**In the case you have not completed the questionnaire yet, but you are still keen to do so, I enclose a copy of the questionnaire and a FREEPOST ENVELOPE.**

**If you have already posted the questionnaire, please ignore this letter.**

**If you have not completed it yet, I would be grateful if you could consider returning the questionnaire as soon as possible.**

In order to be able to come to reliable results about women's attitudes towards screening a high response rate is required. Your contribution will be much appreciated.

I would like to emphasise once more that the questionnaire is **anonymous and confidential and that at no time researchers have access to your name, or any information which could identify you.**

Many thanks in advance for your help with this research

Yours sincerely

Dr Fiona Johnstone

**Appendix IX:**

**Questionnaire used to assess Mammography Attendance in Greece**

## ΜΕΡΟΣ ΠΡΩΤΟ

1. ΗΛΙΚΙΑ: .....

### 2. ΟΙΚΟΓΕΝΕΙΑΚΗ ΚΑΤΑΣΤΑΣΗ

(Βάλτε ✓ στην απάντηση που ταιριάζει στην περίπτωσή σας)

Παντρεμένη/ σε συμβίωση	
Διαζευγμένη/ σε διάσταση	
Χήρα	
Ελεύθερη	

### 3. ΑΡΙΘΜΟΣ ΠΑΙΔΙΩΝ

(Βάλτε ✓ στην απάντηση που ταιριάζει στην περίπτωσή σας)

δεν έχω παιδιά	
έχω ένα παιδί	
έχω δύο παιδιά	
έχω τρία παιδιά	
έχω περισσότερα από δύο παιδιά	

4. Ποια είναι η ανώτερη βαθμίδα εκπαίδευσης που έχετε φτάσει; (π.χ. δημοτικό, δύο τάξεις στο δημοτικό, εξατάξιο γυμνάσιο, λύκειο, πανεπιστήμιο κ.λ.π.)

.....

5. Τι ιατρική περίθαλψη έχετε; (π.χ. Δημόσιο, Ο.Γ.Α., Ι.Κ.Α., Τ.Ε.Β.Ε., Τ.Σ.Α. κ.λ.π.).....

## ΜΕΡΟΣ ΔΕΥΤΕΡΟ

1. Μια γυναίκα έχει περισσότερες πιθανότητες να εμφανίσει καρκίνο του μαστού αν...  
(Βάλτε ✓ στις προτάσεις με τις οποίες συμφωνείτε. Μπορείτε να βάλετε ✓ σε περισσότερες από μία προτάσεις).

είναι ανύπαντρη	
έχει παντρευτεί αλλά δεν έχει παιδιά	
έχει παντρευτεί και έχει παιδιά	
έχει κάνει υστερεκτομή (αφαίρεση μήτρας)	
έχει συγγενείς που έχουν καρκίνο του μαστού	
είναι στην εμμηνόπαυση	
παίρνει αντισυλληπτικά χάπια	
έχει χτυπήσει στο στήθος	
δεν ξέρω	

2. Κατά προσέγγιση, οι πιθανότητες μιας γυναίκας να εμφανίσει καρκίνο του μαστού αυξάνονται σημαντικά όταν γίνεται ...  
(Βάλτε ✓ σε μία μόνο από τις προτάσεις)

20 χρονών	
30 χρονών	
40 χρονών	
50 χρονών	
60 χρονών	
δεν ξέρω	

3. Τα περισσότερα ογκίδια που εμφανίζονται στο στήθος είναι καρκίνος.  
(Βάλτε ✓ σε μία μόνο απάντηση)

Ναι, είναι	
Όχι, δεν είναι	
Δεν ξέρω	

4. Υπάρχει ιστορικό καρκίνου στην κοντινή σας οικογένεια (μητέρα, αδερφή, θεία); (Βάλτε ✓ σε μία μόνο απάντηση)

Ναι, υπάρχει	
Όχι, δεν υπάρχει	
Δεν ξέρω	

### ΜΕΡΟΣ ΤΡΙΤΟ

Οι παρακάτω προτάσεις αναφέρονται στη μαστογραφία. Βάλτε ✓ στο κατάλληλο κουτάκι ανάλογα με το αν συμφωνείτε ή διαφωνείτε με κάθε πρόταση.

	ΣΥΜΦΩΝΩ	ΔΙΑΦΩΝΩ	ΔΕΝ ΞΕΡΩ
Η μαστογραφία μπορεί να εντοπίσει πολλά προβλήματα του στήθους που δεν είναι καρκίνος και πολλά από αυτά δεν θα είχαν εντοπιστεί με άλλο τρόπο.			
Αν μία γυναίκα κάνει μαστογραφία και βγει "καθαρή", δεν χρειάζεται να ξανακάνει μαστογραφία.			
Η μαστογραφία μπορεί να βρει τον καρκίνο του μαστού μέχρι και δύο χρόνια πριν η ίδια η γυναίκα ή ο/η γιατρός της ανακαλύψει τον όγκο ή παρατηρήσει κάποια παθολογική αλλαγή στο στήθος.			
Η μαστογραφία είναι πιο κατάλληλη για νεώτερες γυναίκες, επειδή είναι πιο έγκυρη.			

### ΜΕΡΟΣ ΤΕΤΑΡΤΟ

Παρακάτω ακολουθούν κάποιες προτάσεις σχετικά με την υγεία του στήθους και άλλα θέματα υγείας.

Για κάθε μία από τις προτάσεις βάλτε σε κύκλο το νούμερο που δείχνει πόσο συμφωνείτε ή διαφωνείτε με την πρόταση.

1 = Διαφωνώ εντελώς

2 = Διαφωνώ

3 = Συμφωνώ

4 = Συμφωνώ εντελώς

1. Αν είχα προβλήματα με τη συγκοινωνία δεν θα πήγαινα να κάνω μαστογραφία. 1 2 3 4
2. Με απασχολεί ότι η μαστογραφία μπορεί να πονέσει ή να προκαλέσει ενόχληση. 1 2 3 4
3. Με απασχολεί η ακτινοβολία από τη μαστογραφία. 1 2 3 4
4. Η μαστογραφία μπορεί να με κάνει να νιώσω αμηχανία ή/και ντροπή. 1 2 3 4
5. Είναι δύσκολο να λείψω από τη δουλειά ή (αν δεν δουλεύετε) να αφήσω τις υποχρεώσεις μου στο σπίτι για να μπορέσω να πάω για μαστογραφία. 1 2 3 4
6. Με τη μαστογραφία υπάρχει μεγάλος κίνδυνος να σταλεί μια γυναίκα για επέμβαση χωρίς να είναι απαραίτητο. 1 2 3 4

Παρακάτω ζητάμε τη γνώμη σας για την υγεία γενικά.

Βάλτε σε κύκλο το νούμερο που περιγράφει πόσο συμφωνείτε ή διαφωνείτε με καθεμία από τις προτάσεις.

- 1 = Συμφωνώ εντελώς
- 2 = Συμφωνώ
- 3 = Μάλλον συμφωνώ
- 4 = Μάλλον διαφωνώ
- 5 = Διαφωνώ
- 6 = Διαφωνώ εντελώς

- |  |   |   |   |   |   |   |
|--|---|---|---|---|---|---|
| 1. Αν δεν έχεις την υγεία σου δεν έχεις τίποτα.                                  | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. Υπάρχουν άλλα πράγματα που με απασχολούν περισσότερο από την υγεία μου.       | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. Η υγεία παίζει πολύ μικρό ρόλο στο να είναι κάποιος ευτυχισμένος στη ζωή του. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Δεν υπάρχει τίποτα πιο σημαντικό από την υγεία.                               | 1 | 2 | 3 | 4 | 5 | 6 |

### ΜΕΡΟΣ ΠΕΜΠΤΟ

Οι άνθρωποι διαφέρουν στον τρόπο που παίρνουν αποφάσεις για την υγεία τους. Βάλτε σε κύκλο το νούμερο που δείχνει καλύτερα πώς εσείς αποφασίζετε για θέματα υγείας (π.χ. να πάτε ή όχι στο γιατρό, να κάνετε ή όχι γυμναστική, να κάνετε ή όχι πιο ισορροπημένη διατροφή, να πάτε ή όχι για τεστ Παπανικολάου, να πάτε ή όχι για εξετάσεις κ.λ.π.).

- 1 = Σχεδόν ποτέ
- 2 = Σπάνια
- 3 = Μερικές φορές
- 4 = Σχεδόν πάντα

- |  |   |   |   |   |
|--|---|---|---|---|
| Όταν αποφασίζω για θέματα υγείας μου, σκέφτομαι πολύ προσεκτικά πριν διαλέξω αυτό που θέλω.                                      | 1 | 2 | 3 | 4 |
| Όταν πάρω μια απόφαση για την υγεία μου, ξοδεύω πολύ χρόνο για να πείσω τον εαυτό μου ή να πείσω τη σωστή απόφαση.               | 1 | 2 | 3 | 4 |
| Όταν πρέπει να πάρω μια απόφαση για την υγεία μου, αφήνω να περάσει πολύς καιρός πριν αρχίσω να το σκέφτομαι.                    | 1 | 2 | 3 | 4 |
| Όταν πρέπει να πάρω μια απόφαση για την υγεία μου, προτιμάω να αφήνω τους άλλους να αποφασίζουν για μένα.                        | 1 | 2 | 3 | 4 |
| Όταν αποφασίζω για θέματα υγείας μου, προσπαθώ να ξεκαθαρίσω τι θέλω πριν επιλέξω.   | 1 | 2 | 3 | 4 |
| Όταν παίρνω αποφάσεις για την υγεία μου, νιώθω ότι με πιέζει ο χρόνος πάρα πολύ.   | 1 | 2 | 3 | 4 |
| Αν μια απόφαση σχετικά με την υγεία μου είναι να την πάρω είτε εγώ είτε κάποιος άλλος, αφήνω τον άλλο να πάρει απόφαση για μένα. | 1 | 2 | 3 | 4 |
| Αποφεύγω να πάρω αποφάσεις σχετικά με την υγεία μου.   | 1 | 2 | 3 | 4 |
| Αναβάλλω συνεχώς να πάρω αποφάσεις σχετικά με την υγεία μου.   | 1 | 2 | 3 | 4 |
| Κάθε φορά που πρέπει να πάρω μια δύσκολη απόφαση για την υγεία μου, δεν αισθάνομαι και λίγο αισιόδοξη ότι θα βρω μια καλή λύση.  | 1 | 2 | 3 | 4 |
| Όταν πρέπει να πάρω μια απόφαση για την υγεία μου, προσπαθώ να βρω τα μειονεκτήματα και να έχει κάθε λύση.                       | 1 | 2 | 3 | 4 |
| Καθυστερώ τόσο πολύ να πάρω αποφάσεις για την υγεία μου, μέχρι που είναι πια πολύ αργά.  | 1 | 2 | 3 | 4 |

Οι παρακάτω προτάσεις έχουν να κάνουν με το πώς εσείς αντιμετωπίζετε τα συνηθισμένα και καθημερινά προβλήματα με την υγεία σας.

Για κάθε πρόταση βάλτε σε κύκλο το νούμερο που δείχνει πόσο πολύ ή λίγο χρησιμοποιείτε αυτούς τους τρόπους.

- 1 = Σχεδόν ποτέ
- 2 = Σπάνια
- 3 = Μερικές φορές
- 4 = Σχεδόν πάντα

**ΟΤΑΝ ΕΧΩ ΝΑ ΑΝΤΙΜΕΤΩΠΙΣΩ ΣΥΝΗΘΙΣΜΕΝΑ Ή ΚΑΘΗΜΕΡΙΝΑ ΠΡΟΒΛΗΜΑΤΑ ΜΕ ΤΗΝ ΥΓΕΙΑ ΜΟΥ ...**

- |   |   |   |   |   |
|---|---|---|---|---|
| 1. Νιώθω μεγάλη συναισθηματική πίεση και αφήνω τα συναισθήματά μου να ξεσπάσουν.              | 1 | 2 | 3 | 4 |
| 2. Προσπαθώ να πάρω συναισθηματική υποστήριξη από συγγενείς και φίλους.                       | 1 | 2 | 3 | 4 |
| 3. Μαθαίνω να ζω με το πρόβλημα.  | 1 | 2 | 3 | 4 |
| 4. Προσπαθώ να ξεχαστώ για λίγο πίνοντας οινοπνευματώδη ή παίρνοντας φάρμακα ή/και ναρκωτικά. | 1 | 2 | 3 | 4 |
| 5. Συγκεντρώνομαι και προσπαθώ να κάνω κάτι.  | 1 | 2 | 3 | 4 |
| 6. Πίνω ή παίρνω φάρμακα ή/και ναρκωτικά, για να μην το σκέφτομαι.                            | 1 | 2 | 3 | 4 |
| 7. Μιλώ με κάποιον για το πώς νιώθω.  | 1 | 2 | 3 | 4 |
| 8. Παραδέχομαι πως ό,τι έγινε έγινε και πως δεν μπορεί να αλλάξει.                            | 1 | 2 | 3 | 4 |
| 9. Ταράζομαι και αφήνω τα συναισθήματά μου να ξεσπάσουν.                                      | 1 | 2 | 3 | 4 |
| 10. Κάνω οργανωμένες προσπάθειες για να λύσω το πρόβλημα.                                     | 1 | 2 | 3 | 4 |
| 11. Φέρομαι σαν να μη συμβαίνει τίποτα.   | 1 | 2 | 3 | 4 |
| 12. Λέω στον εαυτό μου "δεν μπορεί να είναι αλήθεια".   | 1 | 2 | 3 | 4 |

**Γιατί ήρθατε σήμερα να κάνετε μαστογραφία; (Βάλτε ένα μόνο ✓ στην απάντηση που ταιριάζει στην περίπτωσή σας)**

Υστερα από σύσταση του/της γιατρού μου, γιατί υπήρχε συγκεκριμένο πρόβλημα.	
Υστερα από δική μου πρωτοβουλία, επειδή υπήρχε συγκεκριμένο πρόβλημα.	
Υστερα από σύσταση του/της γιατρού μου, για προληπτικούς λόγους.	
Υστερα από δική μου πρωτοβουλία, για προληπτικούς λόγους.	

**Πόσες φορές έχετε κάνει μαστογραφία εκτός από τη σημερινή; (Βάλτε ένα μόνο ✓ στην απάντηση που ταιριάζει στην περίπτωσή σας).**

Ποτέ	
Μια φορά	
Δύο φορές	
Περισσότερες από δύο φορές	

**ΕΥΧΑΡΙΣΤΩ ΓΙΑ ΤΗ ΣΥΝΕΡΓΑΣΙΑ**



**Appendix X:**

**Information letter and consent form that accompanied the set of  
scales used for the assessment of  
Breast Cancer Surgery/Mastectomy patients in Scotland**

## **PARTICIPANT INFORMATION SHEET**

Dear Participant,

We would like to invite you to take part in our research project being carried out at Stirling University, by completing a short questionnaire on women's attitudes, beliefs and experiences in relation to breast surgery and breast problems. The project has been funded by the European Economic Community and aims to compare the attitudes of women in Scotland with women in Greece.

We would like to stress that the study is completely anonymous. The questionnaire is confidential and at no time will we as researchers have access to your name, or any data, which could identify you.

Please note that completion of **THIS QUESTIONNAIRE IS NOT PART OF YOUR TREATMENT PROGRAMME IN THE HOSPITAL** and it is your decision whether to complete it or not.

If you agree to take part in this research, we would be grateful if you could complete this questionnaire and post it directly back to us in the self-addressed envelope provided as soon as possible.

We are well aware of the many demands already placed upon your time and the requirements of your treatment, but we would be grateful if you would take the 15 to 30 minutes (approximately) required to complete this questionnaire. You will appreciate that, to have a better understanding of women's views regarding breast problems and breast health care, it will be helpful to have a high proportion of women participating. You can take the questionnaire home and complete it in your own time.

We must emphasise that participation is completely voluntary, anonymous and confidential and that your contribution will be much appreciated.

You will find attached two copies of the consent form. If you agree to take part, please sign one copy of the consent form and hand it to Sister Sheila McNaughton. You can keep the other copy of the consent form along with this information sheet.

Your name or other identification will not be recorded on the questionnaire. At the back of the questionnaire there will be just a code to help us match it with some general information about the type of your breast problem, the treatment you have had and your general health. This data will be collected by Sister Sheila McNaughton from your medical file. However, we must emphasise that **neither your name nor any other information which could identify you will be passed on to us and at no time will we the researchers have access to any data, which could identify individuals.**

If you have any queries about any aspects of this research study, please do not hesitate to contact any member of the research team at the above address, or speak to Sister Sheila McNaughton.

We hope that the results will be useful in planning breast care services for women in the future.

Many thanks in advance for your help with this research.

Yours sincerely

Professor KG Power, Professor of Clinical Psychology

Dr V Swanson, Lecturer and Research Administrator

MS Zoe Chouliara, Postgraduate Researcher

**PLEASE SIGN THIS COPY OF THE CONSENT FORM AND HAND IT TO SISTER SHEILA  
McNAUGHTON**

**PARTICIPANT CONSENT FORM**

I have read and understood the participant information sheet. I understand that participation in this study is not part of the treatment I receive in the Breast Clinic and that I have a right to withdraw from the study at any time I wish so.

I also understand that by signing this form I give my permission to Sister Sheila McNaughton to collect some data regarding the type of my breast problem, the treatment I have had and my general health status from my file. I do understand that neither my name nor any other information which could identify me will be available to the researchers and that at no time will the researchers be able to identify me.

This study has the approval of the Forth Valley Health Board Ethics of Research Committee and the University of Stirling Psychology Department Ethical Committee and will be conducted according to the D.P.A. (Data Protection Act).

I know that my involvement in this study will finish with completion of the questionnaire.

In signing this form I,.....(full name) acknowledge that I have read this form and the information sheet and have understood the nature of this study, which I now agree to take part in. Whilst I agree to take part, I know that I can withdraw at any time and that my routine treatment in the Breast Clinic will not be affected in any way.

Signed .....

Date.....

**PLEASE KEEP THIS COPY OF THE CONSENT FORM**

**PARTICIPANT CONSENT FORM**

I have read and understood the participant information sheet. I understand that participation in this study is not part of the treatment I receive in the Breast Clinic and that I have a right to withdraw from the study at any time I wish so.

I also understand that by signing this form I give my permission to Sister Sheila McNaughton to collect some data regarding the type of my breast problem, the treatment I have had and my general health status from my file. I do understand that neither my name nor any other information which could identify me will be available to the researchers and that at no time will the researchers be able to identify me.

This study has the approval of the Forth Valley Health Board Ethics of Research Committee and the University of Stirling Psychology Department Ethical Committee and will be conducted according to the D.P.A. (Data Protection Act).

I know that my involvement in this study will finish with completion of the questionnaire.

In signing this form I,.....(full name) acknowledge that I have read this form and the information sheet and have understood the nature of this study, which I now agree to take part in. Whilst I agree to take part, I know that I can withdraw at any time and that my routine treatment in the Breast Clinic will not be affected in any way.

Signed .....

Date.....

**Appendix XI:**

**Questionnaire used for the assessment of  
Breast Cancer Surgery/Mastectomy patients in Scotland**

### PART 1: ATTITUDES AND BELIEFS

This is a series of statements about your beliefs towards your breast problem and your health in general. Please circle a number for each statement, which best represents how strongly you agree or disagree with each of the statements. If you have undergone more than one breast surgeries, please answer the following questions having in mind your most recent breast surgery.

- 1 = Strongly Disagree
- 2 = Somewhat Disagree
- 3 = Somewhat Agree
- 4 = Strongly Agree

After breast surgery, I am able to participate in the same activities I engaged before surgery.	1	2	3	4
Breast surgery has affected my marriage/intimate relationship negatively.	1	2	3	4
After breast surgery I have not smoked or drank as much as I did before.	1	2	3	4
I think that breast surgery could generally harm a woman emotionally.	1	2	3	4
After breast surgery I have changed my priorities and started enjoying life better.	1	2	3	4
I believe that my breast problem can be cured easily.	1	2	3	4
I become nervous when I go to hospital for my follow up appointments.	1	2	3	4
After breast surgery I have taken mild physical exercise.	1	2	3	4
My family have benefited from my breast surgery.	1	2	3	4
I think about recurrence of my breast problem.	1	2	3	4
Among the diseases I can imagine getting, my breast problem is the most serious.	1	2	3	4
After breast surgery I eat a more balanced diet than before.	1	2	3	4
I am nervous when waiting for test results after my routine follow up appointments.	1	2	3	4
I think that the breast surgery was essential, because it has saved my life.	1	2	3	4

### PART 2: PERSONAL EXPERIENCE

In this part we are interested in your personal experience and feelings, in relation to different aspects of your breast problem. There are no right or wrong answers.

To what extent have you been affected by the following physical symptoms since your first breast surgery? Please circle the number for each symptom, which best represents how much you have been affected by each of the symptoms)

- 1 = Not at all
- 2 = A little
- 3 = Moderately
- 4 = A lot

Swelling of the arm(s) (including hands and fingers).	1	2	3	4
Sensation of pain, "pins and needles" and/or numbness in surgery areas.	1	2	3	4
Difficulties with physical activities e.g. (household chores and work activities).	1	2	3	4
Weakness and/or heaviness of the arm(s).	1	2	3	4

This is a series of statements about your attitudes and feelings in relation to the experience of your breast problem. Please circle the number for each statement, which best represents how strongly you agree or disagree with each of the statements.

If you have undergone more than one breast surgeries, please answer the following questions having in mind your first breast surgery.

- 1 = Disagree
- 2 = Somewhat Disagree
- 3 = Somewhat Agree
- 4 = Agree

My income has become inadequate because of medical expenses caused by my breast problem.	1	2	3	4
Following my breast surgery I do not think I worry more about my health than I used to before surgery.	1	2	3	4
I think that breasts are not an important part of being a woman.	1	2	3	4
After having a breast surgery, it has been embarrassing for me to shop for clothes.	1	2	3	4
After my breast surgery I do not feel like embracing, kissing or caressing my partner as much as before.	1	2	3	4
I now prefer not to participate in certain social activities (e.g. going out with friends, going to parties etc.) as much as I used to.	1	2	3	4
Following my breast surgery, I have become depressed.	1	2	3	4
I avoid letting others see the breast surgery scar for fear of frightening them.	1	2	3	4
I have difficulties at work in regard to my breast surgery experience.	1	2	3	4
I think that breasts make me desirable and acceptable in my intimate relationship.	1	2	3	4
I have no one with whom to discuss my concerns regarding my breast problem.	1	2	3	4
Following my breast surgery, I feel sorry for myself.	1	2	3	4
After my breast surgery, I do not care about my appearance as much as I used to do before the operation.	1	2	3	4
Breast surgery has made me less desirable to my partner.	1	2	3	4
I feel that I will never be as happy after having breast surgery as I was before surgery.	1	2	3	4
After the recovery period, I enjoy sexual relations as much as I did before having the breast surgery.	1	2	3	4

### PART 3: IMAGINATIVE SITUATIONS

People behave differently in different situations. Below you are presented with two imaginative situations, going to the dentist and travelling by aeroplane. We are interested in the way you would have behaved in these situations. Try to imagine that you are in the situation and tick the actions you think you would take in each situation.

Vividly imagine that you are afraid of the dentist and have to get some dental work done. Which of the following would you do? Tick all of the statements that might apply to you.

Tick	
	I would ask the dentist exactly what he/she was going to do.
	I would take a tranquilliser or have a drink before going.
	I would try to think about pleasant memories.
	I would want the dentist to tell me when I would feel pain.
	I would try to sleep.
	I would watch all the dentist's movements and listen for the sound of the drill.
	I would watch the flow of water from my mouth to see if it contained blood.
	I would do mental puzzles in my mind.

Vividly imagine that you are on an aeroplane, thirty minutes from your destination, when the plane unexpectedly goes into a steep climb and then suddenly level off. After a short time, the pilot announces that nothing is wrong, although the rest of the ride may be rough. You, however, are not convinced that all is well. Tick all of the statements that might apply to you.

Tick	
	I would carefully read the information provided about safety procedures in the plane and make sure I knew where the emergency exits were.
	I would make a small talk with the passenger beside me.
	I would watch the end of the movie, even if I had seen it before.
	I would call for the flight attendant and ask her/him exactly what the problem was.
	I would order a drink from the flight attendant.
	I would listen carefully to the engines for unusual noises and would watch the crew to see if their behaviour was out of the ordinary.
	I would talk to the passenger beside me about what might be wrong.
	I would settle down and read a book or magazine or write a letter.



**PART 4: ADDITIONAL INFORMATION SHEET**

1. Did you seek professional (non medical) help, in order to cope better with your breast problem? (Please circle as applies)

YES                      NO

**IF "YES":**

(A) From whom did you seek such help? (Please tick as applies. You can tick more than one)

(B) Please rate the extent to which this professional help was helpful for you (Please, tick as applies)

tick	PROFESSIONAL SUPPORT
	Psychiatrist
	Clinical Psychologist
	Counsellor /Psychotherapist
	Social worker
	Nurse
	Member of clergy
	Non – professional support group
	Other (specify..... .....)

	Not at all	A little	Moderately	A lot

2. Please rate how much emotional and practical support you have received from the following persons, in relation to your breast problem. Please circle the number for each person, which best represents how much support you have received from that person.

0 = Not at all  
 1 = A Little  
 2 = Moderate Amount  
 3 = A Lot

INFORMAL SUPPORT								
Persons	Emotional Support				Practical support (e.g. helping with children, housework)			
	0	1	2	3	0	1	2	3
Partner/Spouse	0	1	2	3	0	1	2	3
Children	0	1	2	3	0	1	2	3
Doctors / Nurses	0	1	2	3	0	1	2	3
Family/friends	0	1	2	3	0	1	2	3
Co-workers	0	1	2	3	0	1	2	3

3. Are there any issues in your life, other than the health - related ones, that particularly concern you at present? (e.g. divorce / separation, financial problems etc.) (Please circle as applies)

YES                      NO

If "YES", please specify .....



**Appendix XII:**

**Patient Demographic Record Sheet used for the assessment of  
Breast Cancer Surgery/Mastectomy patients in Scotland**

## PATIENT DEMOGRAPHICS RECORD SHEET

1. Age (in years) .....
2. Ethnic Origin .....
3. Occupation .....
4. Marital Status

	tick
Married / Cohabiting	
Divorced / Separated	
Widowed	
Never married / Single	

5. Parity

	tick
No children	
One child	
Two children	
Three children	
More than three children	

7. Does the patient currently suffer from any of the following conditions?  
(Please tick as applies)

	tick
Arthritis	
Heart disease	
High blood pressure	
Diabetes	
Other (specify..... .....)	

### 6. Family History of Breast Cancer

	tick
Yes	
No	

If "Yes", please state the member of the family  
.....

8. Has the patient had or is she currently receiving any of the following treatments for breast cancer?  
(Please circle as applies)

	Never	In the past	Currently
Chemotherapy	0	1	2
Radiotherapy	0	1	2
Endocrine therapy	0	1	2

9. Did the patient have positive lymph nodes at the time of her first breast surgery?  
(Please circle as applies)

YES                      NO

10. Indicate the type of the first surgery .....

Was the surgery done in:                      One breast?                      Both breasts?  
(Please circle as applies)

1. When did the patient have her breast surgery? (If the patient has had more than one breast operations, please give the date of the first breast operation)  
 (Please specify the date.....)

12. Which is the most recent after – surgery appointment (scheduled by the clinic) the patient has attended at the clinic? (Please tick as applies)

	tick
3 months	
6 months	
One year	
Other (specify.....)	

13. How many out-of-schedule appointments has the patient attended since her first breast surgery, except her scheduled after – surgery appointments (by out-of-schedule appointments we mean those that the patient generated herself in order to discuss a specific problem or concern)?  
 Please specify number .....

14. Has the patient ever had a recurrence or a second breast cancer, since her initial breast cancer diagnosis? (Please tick as applies)

	tick
(a) Recurrence	
(b) Second breast cancer	

15. Has the patient had any other cancer(s) besides breast cancer (metastases)?  
 (Please circle as applies)

YES NO

16. Did the patient have breast reconstruction? (Please circle as applies)

YES NO

17. Has the patient ever been on any kind of psychotropic medication?  
 (Please circle as applies)

YES NO

If "YES", when? (Please tick as applies)

	tick
Before breast cancer diagnosis	
After breast cancer diagnosis	
Both before and after breast cancer diagnosis	

Please specify the type of psychotropic medication (Please tick as applies)

	tick
Anxiolytic	
Antidepressant	
Other (Specify ..... .....)	

**Appendix XIII:**

**Instructions to medical staff in Greece for the administration of the  
questionnaire used for the assessment of  
Breast Cancer Surgery/Mastectomy patients and the collection of  
demographics**

## ΟΔΗΓΙΕΣ ΓΙΑ ΤΗ ΧΟΡΗΓΗΣΗ ΤΟΥ ΕΡΩΤΗΜΑΤΟΛΟΓΙΟΥ ΚΑΙ ΤΗ ΣΥΓΚΕΝΤΡΩΣΗ ΤΩΝ ΔΗΜΟΓΡΑΦΙΚΩΝ ΣΤΟΙΧΕΙΩΝ

1. Η έρευνα περιλαμβάνει δύο ερωτηματολόγια. Το ένα προορίζεται για συμπλήρωση από τις ασθενείς και το άλλο από κάποιο μέλος του ιατρικού προσωπικού (στη Σκωτία συμπληρώθηκε από τη νοσοκόμα της Κλινικής Μαστού).
2. Το ερωτηματολόγιο για τις ασθενείς είναι τέσσερις σελίδες και για τη συμπλήρωσή του απαιτούνται 15 με 30 λεπτά περίπου. Το ερωτηματολόγιο συνοδεύεται από ένα ενημερωτικό γράμμα προς τις γυναίκες που θα συμμετάσχουν. Στο γράμμα αναφέρονται σύντομα οι σκοποί της συγκεκριμένης έρευνας και τονίζεται ο ανώνυμος, εθελοντικός και εμπιστευτικός χαρακτήρας της.
3. Το ερωτηματολόγιο που προορίζεται για συμπλήρωση από τη νοσοκόμα (ή άλλο μέλος του ιατρικού προσωπικού) έχει στόχο τη συγκέντρωση δημογραφικών στοιχείων, στοιχείων σχετικά με τον τύπο του καρκίνου του μαστού και της θεραπείας που ακολουθείται, καθώς και στοιχείων σχετικά με τη γενικότερη σωματική και ψυχική υγεία των ασθενών που συμμετέχουν.
4. Τα δεδομένα που θα συγκεντρωθούν από το ερωτηματολόγιο των ασθενών θα πρέπει να συνδυαστούν με τα δεδομένα από τα δεδομένα από το ερωτηματολόγιο που θα συμπληρωθεί από τη νοσοκόμα. Για να είναι αυτό εφικτό, θα πρέπει να δοθεί σε κάθε ασθενή που συμμετέχει ένας αριθμός (συνήθως δίνουμε τον αριθμό του ιατρικού φακέλου της- patient number-, αλλά μπορεί να είναι οποιοσδήποτε αριθμός). Ο αριθμός αυτός γράφεται στην τελευταία σελίδα του ερωτηματολογίου που δίνεται στην ασθενή, αλλά και στο ερωτηματολόγιο που συμπληρώνεται από τη νοσοκόμα. Μ' αυτό τον τρόπο μπορούμε να συνδυάσουμε τις πληροφορίες από τα δύο ερωτηματολόγια χωρίς να αναγράφεται το όνομα της ασθενούς σε κανένα ερωτηματολόγιο. Έτσι προστατεύεται η ανωνυμία των ασθενών καθώς και η εμπιστευτικότητα των πληροφοριών που συγκεντρώνονται.
5. Πριν αρχίσει η χορήγηση των ερωτηματολογίων, η νοσοκόμα μπορεί να φτιάξει μια λίστα με τα ονόματα των ασθενών στις οποίες πρόκειται να δοθεί το ερωτηματολόγιο. Δίπλα από κάθε όνομα θα δώσει έναν αριθμό. Στη συνέχεια θα γράψει το συγκεκριμένο αριθμό στην τελευταία σελίδα του ερωτηματολογίου, πριν το δώσει στην ασθενή για συμπλήρωση. Ο ίδιος αριθμός θα γραφτεί και στο

ερωτηματολόγιο για τα δημογραφικά στοιχεία. Όταν η ασθενής επιστρέψει το ερωτηματολόγιο συμπληρωμένο, η νοσοκόμα θα μπορεί να συμπληρώσει το άλλο ερωτηματολόγιο για τα δημογραφικά στοιχεία, ανατρέχοντας στο φάκελο της συγκεκριμένης ασθενούς. Αυτή η διαδικασία θα βοηθήσει τη νοσοκόμα να ξέρει ανά πάσα στιγμή ποιες ασθενείς έχουν συμπληρώσει το ερωτηματολόγιο και από ποιες έχει η ίδια συγκεντρώσει δημογραφικά στοιχεία. Παράλληλα, όταν οι ερευνητές παραλάβουν τα δεδομένα αυτά, θα είναι ανώνυμα, αλλά ο συνδυασμός των πληροφοριών από τα δύο ερωτηματολόγια θα εξακολουθεί να είναι δυνατός, εξαιτίας του αριθμού που θα τους έχει δοθεί.

6. Οι ασθενείς θα μπορούσαν να συμπληρώσουν το ερωτηματολόγιο στην αίθουσα αναμονής, όταν έρχονται να εξεταστούν μετά την επέμβαση στο μαστό.
7. Για να συμμετέχουν στην έρευνα, οι ασθενείς θα πρέπει να έχουν χειρουργηθεί για καρκίνο του μαστού (όχι για καλοήγη μαστοπάθεια). Θα ήταν καλό να συμμετάσχουν ασθενείς που βρίσκονται σε διάφορες χρονικές στιγμές μετά την επέμβαση (π.χ. ασθενείς που έχουν εγχειριστεί πρόσφατα, αλλά και ασθενείς που έχουν εγχειριστεί καιρό πριν τη συμμετοχή τους στην έρευνα) και από διάφορα μορφωτικά και κοινωνικά στρώματα. Στη Σκωτία οι ασθενείς που συμμετέχουν στην έρευνα έχουν υποβληθεί είτε σε mastectomy είτε σε wide local excision, γιατί αυτοί είναι οι δύο τύποι επέμβασης για καρκίνο του μαστού που χρησιμοποιούνται στο συγκεκριμένο νοσοκομείο (Stirling Royal Infirmary-Scotland). Αν στο νοσοκομείο σας χρησιμοποιούνται άλλοι τύποι, αυτό δεν αποτελεί πρόβλημα, αρκεί να συμπεριλάβουμε στο δείγμα ασθενείς από διαφορετικούς τύπους επέμβασης, για να καλυφθεί όλο το φάσμα, όσο είναι δυνατό.
8. Κάθε ασθενής θα συμπληρώνει το ερωτηματολόγιο άπαξ. Για να προχωρήσει η νοσοκόμα στη συμπλήρωση του ερωτηματολογίου για τα δημογραφικά μιας ασθενούς, θα πρέπει πρώτα η ασθενής αυτή να έχει επιστρέψει συμπληρωμένο το ερωτηματολόγιό της. Η χρονική αυτή σειρά είναι ηθικά απαραίτητη, γιατί η συμπλήρωση του ερωτηματολογίου βεβαιώνει ότι η ασθενής έχει διαβάσει το ενημερωτικό γράμμα, ότι δέχεται να συμμετάσχει στην έρευνα και ότι δίνει τη συγκατάθεσή της να πάρει η νοσοκόμα τις δημογραφικές πληροφορίες από τον ιατρικό της φάκελο. Κατά συνέπεια, αν μια ασθενής δεν συγκατατίθεται στη συλλογή των δημογραφικών στοιχείων από τον φάκελό της, δεν θα συμπληρώνει το ερωτηματολόγιο και δεν θα συμπεριλαμβάνεται στο δείγμα..



ΜΕΛΗ ΤΗΣ ΕΡΕΥΝΗΤΙΚΗΣ ΟΜΑΔΑΣ

<b>ή Χουλιάρα</b> <b>(in Psychology Μεταπτυχιακή Φοιτήτρια)</b>	<b>University of Stirling</b> <b>Department of Psychology</b> <b>Stirling FK9 4LA</b> <b>Scotland, UK</b> <b>Tel. 0044 786 466377 / 467640</b> <b>Fax. 0044 786 467641</b>
<b>Professor Kevin Power</b> <b>(επίσημος επόπτης καθηγητής)</b>	
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<b>Dudley Booth</b> <b>(Consultant Surgeon)</b>	<b>Stirling Royal Infirmary</b> <b>Breast Clinic</b> <b>NHS Trust</b> <b>Livilands</b> <b>Stirling FK8 2AU</b> <b>Tel. 0044 786 434000</b> <b>Fax. 0044 786 450588</b>
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**Appendix XIV:**

**Information letter and questionnaire used for the assessment of  
Breast Cancer Surgery/Mastectomy patients in Greece**



# UNIVERSITY OF STIRLING

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## ΠΡΟΣ ΤΗ ΣΥΜΜΕΤΕΧΟΥΣΑ

Θα θέλαμε να ζητήσουμε τη συμμετοχή σας στην έρευνα που διεξάγουμε στο Πανεπιστήμιο Στέρλινγκ της Βρετανίας, σε συνεργασία με το Εξωτερικό Ιατρείο Χειρουργικής μαστού του Πανεπιστημιακού Νοσοκομείου Ιωαννίνων, με τη συμπλήρωση ενός σύντομου ερωτηματολογίου. Το ερωτηματολόγιο έχει να κάνει με τις απόψεις, πεποιθήσεις και εμπειρίες των γυναικών σε σχέση με τις χειρουργικές επεμβάσεις στο στήθος και τα προβλήματα του στήθους γενικά.. Η έρευνα χρηματοδοτείται από την Ευρωπαϊκή Κοινότητα και στοχεύει στο να συγκρίνει τις απόψεις των γυναικών στη Σκωτία με αυτές των γυναικών στην Ελλάδα.

Θα θέλαμε να τονίσουμε ότι το ερωτηματολόγιο είναι απολύτως ανώνυμο και εμπιστευτικό και ότι οι ερευνητές δεν θα έχουν καμία πρόσβαση στο όνομά σας ή σε οποιαδήποτε άλλο στοιχείο της ταυτότητάς σας.

Επίσης τονίζουμε ότι **Η ΣΥΜΠΛΗΡΩΣΗ ΤΟΥ ΣΥΓΚΕΚΡΙΜΕΝΟΥ ΕΡΩΤΗΜΑΤΟΛΟΓΙΟΥ ΔΕΝ ΑΠΟΤΕΛΕΙ ΜΕΡΟΣ ΤΗΣ ΘΕΡΑΠΕΙΑΣ ΣΑΣ ΣΤΟ ΝΟΣΟΚΟΜΕΙΟ** και η απόφαση για το αν θα το συμπληρώσετε ή όχι είναι αποκλειστικά δική σας.

Αν αποφασίσετε να πάρετε μέρος σ' αυτή την έρευνα, συμπληρώστε το ερωτηματολόγιο που ακολουθεί και δώστε το στη νοσοκόμα του Ιατρείου. Η συμπλήρωση του ερωτηματολογίου παίρνει περίπου 15 με 30 λεπτά. Όπως αντιλαμβάνεστε, για να σχηματίσουμε μια πιο ολοκληρωμένη εικόνα σχετικά με τα θέματα του στήθους, χρειαζόμαστε τη συμμετοχή όσο το δυνατόν περισσότερων γυναικών. Για το λόγο αυτό, η συμμετοχή σας, θα ήταν ιδιαίτερα πολύτιμη για την πορεία της έρευνας.

Τονίζουμε και πάλι ότι η συμμετοχή σας είναι απόλυτα εθελοντική, ανώνυμη και εμπιστευτική και ότι η συμβολή σας θα εκτιμηθεί ιδιαίτερα.

Το όνομα ή οποιοδήποτε άλλο στοιχείο της ταυτότητας σας δεν θα καταγραφούν στο ερωτηματολόγιο. Στην τελευταία σελίδα του ερωτηματολογίου θα υπάρχει μόνο ένας κωδικός αριθμός, ο οποίος θα μας βοηθήσει να το συνδυάσουμε με ορισμένα γενικά στοιχεία σχετικά με τον τύπο του προβλήματος στο στήθος σας, τη θεραπεία που ακολουθείται και τη γενική σας υγεία. Τα στοιχεία αυτά θα τα συγκεντρώσει η νοσοκόμα του Ιατρείου από τον ιατρικό σας φάκελο. Τονίζουμε ότι σε καμία περίπτωση εμείς οι ερευνητές δεν θα έχουμε πρόσβαση στο όνομα σας ή άλλα στοιχεία που θα μπορούσαν να σας αναγνωρίσουν.

Αν θέλατε να ρωτήσετε κάτι σε σχέση με αυτή την έρευνα, μη διστάσετε να επικοινωνήσετε με τα μέλη της ερευνητικής ομάδας ή να απευθυνθείτε στη νοσοκόμα του Ιατρείου.

Ελπίζουμε ότι, με τη βοήθειά σας, τα αποτελέσματα της έρευνας αυτής θα συντελέσουν σε μελλοντική βελτίωση των υπηρεσιών προς τις γυναίκες με προβλήματα στήθους.

Ευχαριστούμε για τη βοήθειά σας.

Με τιμή  
Ζωή Χουλιάρη  
(Μεταπτυχιακή Ερευνήτρια)

## ΓΙΑ ΣΥΜΠΛΗΡΩΣΗ ΑΠΟ ΤΗΝ ΑΣΘΕΝΗ

### ΜΕΡΟΣ ΠΡΩΤΟ: ΑΠΟΨΕΙΣ ΚΑΙ ΠΕΠΟΙΘΗΣΕΙΣ

Παρακάτω ενδιαφερόμαστε για τις απόψεις σας σχετικά με το πρόβλημα στο στήθος σας και την υγεία γενικότερα. Για μία από τις παρακάτω προτάσεις βάλτε σε κύκλο το νούμερο που δείχνει πόσο συμφωνείτε ή διαφωνείτε με την άποψη. Αν έχετε κάνει περισσότερες από μία χειρουργικές επεμβάσεις στο στήθος, απαντήστε τις ερωτήσεις αυτές στο μυαλό σας την πρώτη χειρουργική επέμβαση στο στήθος σας.

1 = Διαφωνώ εντελώς

2 = Διαφωνώ

3 = Συμφωνώ

4 = Συμφωνώ εντελώς

Μετά τη χειρουργική επέμβαση στο στήθος μου, είμαι σε θέση να κάνω τα ίδια πράγματα που έκανα πριν.	1	2	3	4
Η χειρουργική επέμβαση στο στήθος έχει επηρεάσει αρνητικά το γάμο μου/την ερωτική μου ζωή.	1	2	3	4
Μετά τη χειρουργική επέμβαση στο στήθος δεν καπνίζω και δεν πίνω τόσο πολύ όσο πριν την επέμβαση.	1	2	3	4
Νομίζω ότι μια χειρουργική επέμβαση στο στήθος θα μπορούσε να βάλει σε κίνδυνο τη συναισθηματική ισορροπία μιας γυναίκας.	1	2	3	4
Μετά τη χειρουργική επέμβαση στο στήθος, έχω αλλάξει προτεραιότητες και έχω αρχίσει να ζυγίζω διαφορετικά στοιχεία της ζωής μου πιο πολύ από πριν.	1	2	3	4
Πιστεύω ότι το πρόβλημα στο στήθος μου θεραπεύεται εύκολα.	1	2	3	4
Είμαι ανήσυχη όταν πηγαίνω στο νοσοκομείο για τα ραντεβού σχετικά με το πρόβλημα στο στήθος μου.	1	2	3	4
Μετά τη χειρουργική επέμβαση στο στήθος έχω αρχίσει να κάνω ελαφριά γυμναστική.	1	2	3	4
Η οικογένειά μου έχει ωφεληθεί από τη χειρουργική επέμβαση στο στήθος μου.	1	2	3	4
Με απασχολεί η σκέψη ότι το πρόβλημα στο στήθος μου μπορεί να ξαναεμφανιστεί.	1	2	3	4
Το πρόβλημα που έχω με το στήθος μου είναι το πιο σοβαρό πρόβλημα υγείας που θα μπορούσε να μου συμβεί.	1	2	3	4
Μετά τη χειρουργική επέμβαση στο στήθος ακολουθώ μια πιο ισορροπημένη διατροφή από πριν.	1	2	3	4
Είμαι ανήσυχη κάθε φορά που περιμένω να βγουν τα αποτελέσματα των εξετάσεων σχετικά με το πρόβλημα στο στήθος μου.	1	2	3	4
Πιστεύω ότι η χειρουργική επέμβαση στο στήθος μου ήταν απαραίτητη, γιατί μου έσωσε τη ζωή.	1	2	3	4

### ΜΕΡΟΣ ΔΕΥΤΕΡΟ: ΠΡΟΣΩΠΙΚΕΣ ΕΜΠΕΙΡΙΕΣ

Σε αυτό το μέρος του ερωτηματολογίου ενδιαφερόμαστε για την προσωπική σας εμπειρία και τα συναισθήματά σας σχετικά με το πρόβλημα στο στήθος σας. Δεν υπάρχουν σωστές ή λάθος απαντήσεις.

Από την πρώτη χειρουργική επέμβαση στο στήθος σας και μετά, σε ποιο βαθμό σας έχουν απασχολήσει τα παρακάτω σωματικά συμπτώματα;

Βάλτε σε κύκλο το νούμερο που δείχνει πόσο σας έχει απασχολήσει το καθένα από τα παρακάτω συμπτώματα)

1 = Καθόλου

2 = Λίγο

3 = Αρκετά

4 = Πολύ

Πρήξιμο στο χέρι (-α) (μπράτσα και δάχτυλα).	1	2	3	4
Πόνος, αίσθηση σαν να σας τρυπούν βελόνια και μούδιασμα στο σημείο της εγχείρησης.	1	2	3	4
Δυσκολία με τις σωματικές δραστηριότητες (π.χ. με τις δουλειές του σπιτιού, τη δουλειά ή από το σπίτι).	1	2	3	4
Αδυναμία και βάρος στο χέρι(-α).	1	2	3	4



## ΓΙΑ ΣΥΜΠΛΗΡΩΣΗ ΑΠΟ ΤΗΝ ΑΣΘΕΝΗ

Ποιον έχετε πάρει τις περισσότερες πληροφορίες για πρόβλημα με το στήθος σας και τη θεραπεία του; (Βάλτε ✓ στην απάντηση που σας ταιριάζει. Μπορείτε να βάλτε ✓ μόνο σε μία απάντηση)

Από το γιατρό(-ους) / νοσοκόμα(-μες)
Από την οικογένεια / φίλους
Από ιατρικά βιβλία
Από περιοδικά / εφημερίδες
Από την τηλεόραση
Από άτομα με παρόμοιο πρόβλημα
Από άλλον (Ποιον; .....)

5. Πώς ανακαλύψατε ότι έχετε πρόβλημα με το στήθος σας; (Βάλτε ✓ στην απάντηση που σας ταιριάζει. Μπορείτε να βάλτε ✓ μόνο σε μία απάντηση)

Από μόνη σας
Από το σύντροφό σας
Στη μαστογραφία
Με εξέταση του στήθους από το γιατρό (παθολόγο, γυναικολόγο, χειρουργό)
Με άλλον τρόπο (Ποιον τρόπο;.....)

Ποιον τρόπο έχει αλλάξει η ζωή σας γενικά και ο τρόπος που αντιμετωπίζετε τον εαυτό σας και τους άλλους, που διαγνωστήκατε και κάνατε θεραπεία για το πρόβλημα στο στήθος σας;

**ΕΥΧΑΡΙΣΤΩ ΓΙΑ ΤΗ ΣΥΝΕΡΓΑΣΙΑ**

**Appendix XV:**

**Patient Demographic Record Sheet used for the assessment of  
Breast Cancer Surgery/Mastectomy patients in Greece**

**ΔΗΜΟΓΡΑΦΙΚΑ ΣΤΟΙΧΕΙΑ ΑΣΘΕΝΟΥΣ**

1. Ηλικία (σε χρόνια) .....

2. Επάγγελμα .....

3. Οικογενειακή Κατάσταση (Βάλτε ✓ στην κατάλληλη απάντηση)

Παντρεμένη / σε συμβίωση	
Διαζευγμένη / σε διάσταση	
Χήρα	
Ελεύθερη	

4. Αριθμός παιδιών

(Βάλτε ✓ στην κατάλληλη απάντηση)

Κανένα	
Ένα	
Δύο	
Τρία	
Περισσότερα από τρία	

5. Οικογενειακό ιστορικό καρκίνου του μαστού

(Βάλτε ✓ στην κατάλληλη απάντηση)

ΝΑΙ	
ΌΧΙ	

Αν "ΝΑΙ", αναφέρατε το μέλος της οικογένειας

.....

6. Από ποιες από τις παρακάτω παθήσεις έχει η ασθενής; (Βάλτε ✓ εκεί ταριάζει)

Αρτηρίτιδα	
Αυτοπάθεια	
Ασπασία	
Βήχης	
Άλλη πάθηση (Ποια;.....)	
.....)	

7. Έχει υποβληθεί η ασθενής ή υποβάλλεται ακόμα σε κάποια από τις παρακάτω θεραπείες;

(Βάλτε σε κύκλο τις κατάλληλες απαντήσεις)

Χημειοθεραπεία	0	1	2
Ραδιοθεραπεία	0	1	2
Ορμονική θεραπεία	0	1	2

8. Έχει η ασθενής θετικούς λεμφαδένες, όταν έγινε η αρχική επέμβαση στο μαστό; (Βάλτε σε κύκλο την κατάλληλη απάντηση)

ΝΑΙ

ΌΧΙ

9. Τύπος επέμβασης στο μαστό .....

10. Η επέμβαση έγινε:

Στον ένα μαστό;

Και στους δύο μαστούς;

(Βάλτε σε κύκλο την κατάλληλη απάντηση)

11. Πότε έγινε η αρχική επέμβαση στο μαστό; (Ημερομηνία .....) )



**ΓΙΑ ΣΥΜΠΛΗΡΩΣΗ ΑΠΟ ΜΕΛΟΣ ΤΟΥ ΙΑΤΡΙΚΟΥ ΠΡΟΣΩΠΙΚΟΥ**

Ποιο είναι το πιο πρόσφατο ραντεβού που είχε η ασθενής στο εξωτερικό ιατρείο μαστού; (Βάλτε ✓ στην κατάλληλη απάντηση)

3 μήνες μετά την επέμβαση	
6 μήνες μετά την επέμβαση	
Ένα χρόνο μετά την επέμβαση	
Άλλο (αναφέρατε..... .....)	

Πόσες φορές έχει ζητήσει η ασθενής ραντεβού με το εξωτερικό ιατρείο μαστού (εκτός από τα σημεία ραντεβού που ορίζει ο γιατρός) για να συζητήσει κάποιο συγκεκριμένο πρόβλημα ή ανησυχία; (Βάλτε τον αριθμό αυτών των ραντεβού .....)

4. Είχε η ασθενής επανεμφάνιση του καρκίνου του μαστού, από τότε που έγινε η αρχική διάγνωση καρκίνου του μαστού; (Βάλτε ✓ στην κατάλληλο κουτάκι)

(a) Επανεμφάνιση του καρκίνου του μαστού στο ίδιο σημείο, όπου είχε διαγνωστεί αρχικά	
(b) Εμφάνιση δευτερογενούς καρκίνου του μαστού	

5. Έχει εμφανίσει η ασθενής άλλους τύπους καρκίνου εκτός από καρκίνο του μαστού (μετάσταση); (Βάλτε σε κύκλο την κατάλληλη απάντηση)

ΝΑΙ                      ΌΧΙ

6. Έχει κάνει η ασθενής πλαστική για ανασύσταση μαστού; (Βάλτε σε κύκλο την κατάλληλη απάντηση)

ΝΑΙ                      ΌΧΙ

7. Έχει υποβληθεί ποτέ η ασθενής σε κάποιο είδος ψυχοφαρμάκου; (Βάλτε σε κύκλο την κατάλληλη απάντηση)

ΝΑΙ                      ΌΧΙ

Αν «ΝΑΙ», τότε υποβλήθηκε;

(Βάλτε ✓ στην κατάλληλη απάντηση. Μπορείτε να βάλετε ✓ σε περισσότερες από μία απαντήσεις, αν χρειάζεται)

Πριν την αρχική διάγνωση καρκίνου του μαστού	
Μετά την αρχική διάγνωση καρκίνου του μαστού	
Και πριν και μετά τη αρχική διάγνωση καρκίνου του μαστού	

Παρακαλώ αναφέρατε τον τύπο του ψυχοφαρμάκου.

(Βάλτε ✓ στην κατάλληλη απάντηση. Μπορείτε να βάλετε ✓ σε περισσότερες από μία απαντήσεις, αν χρειάζεται)

Αγχολυτικά	
Αντικαταθλιπτικά	
Άλλο (Τι είδους;..... .....)	

ΜΕΡΟΣ ΠΡΩΤΟ

2. ΗΛΙΚΙΑ: .....

2. ΤΜΗΜΑ .....

3. ΤΟΜΕΑΣ .....

4. ΕΤΟΣ ΣΠΟΥΔΩΝ .....

5. ΟΙΚΟΓΕΝΕΙΑΚΗ ΚΑΤΑΣΤΑΣΗ

(Βάλτε ✓ στην απάντηση που ταιριάζει στην περίπτωση σας)

Παντρεμένη/ σε συμβίωση	
Διαζευγμένη/ σε διάσταση	
Χήρα	
Ελεύθερη	

6. ΑΡΙΘΜΟΣ ΠΑΙΔΙΩΝ

(Βάλτε ✓ στην απάντηση που ταιριάζει στην περίπτωση σας)

δεν έχω παιδιά	
έχω ένα παιδί	
έχω δύο παιδιά	
έχω τρία παιδιά	
έχω περισσότερα από δύο παιδιά	

7. ΘΡΗΣΚΕΥΜΑ .....

8. Έχετε εμφανίσει ποτέ κάποιο πρόβλημα στο στήθος; (Βάλτε σε κύκλο την απάντηση που ταιριάζει στην περίπτωση σας)

ΝΑΙ

ΌΧΙ

Αν ΝΑΙ, περιγράψτε το πρόβλημα/προβλήματα σύντομα.

9. Έχετε ποτέ διαγνωστεί με οποιαδήποτε μορφή καρκίνου, εκτός από καρκίνο του μαστού; (Βάλτε σε κύκλο την απάντηση που ταιριάζει στην περίπτωση σας)

ΝΑΙ

ΌΧΙ

Αν ΝΑΙ, με ποια μορφή καρκίνου; .....

Ποιο/α από τα παρακάτω μέλη της οικογένειάς σας έχει διαγνωστεί με καρκίνο του μαστού; (Βάλτε ✓ στις απαντήσεις με τις οποίες συμφωνείτε. Μπορείτε να βάλετε ✓ σε περισσότερες από μία απαντήσεις).

Μητέρα σας	
Πατέρα σας (από την πλευρά της μητέρας)	
Πατέρα σας (από την πλευρά του πατέρα)	
Αδερφή σας	
Θεία σας	
Άλλο μέλος (Αναφέρατε.....)	
Κανένα μέλος της οικογένειας	
Δεν ξέρω	

11. Ποιο/α από τα παρακάτω μέλη της οικογένειάς σας έχει διαγνωστεί με οποιαδήποτε μορφή καρκίνου εκτός από καρκίνο του μαστού; (Βάλτε ✓ στις απαντήσεις με τις οποίες συμφωνείτε. Μπορείτε να βάλετε ✓ σε περισσότερες από μία απαντήσεις).

Η μητέρα σας	
Η γιαγιά σας (από την πλευρά της μητέρας)	
Η γιαγιά σας (από την πλευρά του πατέρα)	
Η αδερφή σας	
Η θεία σας	
Άλλο μέλος (Αναφέρατε.....)	
Κανένα μέλος της οικογένειας	
Δεν ξέρω	

12. Καπνίζετε; (Βάλτε ✓ σε μία μόνο απάντηση)

ΝΑΙ	
ΌΧΙ	

Αν ΝΑΙ, πόσα τσιγάρα περίπου καπνίζετε την ημέρα; .....

13. Πίνετε οινοπνευματώδη ποτά; (Βάλτε ✓ σε μία μόνο απάντηση)

ΝΑΙ	
ΌΧΙ	

Αν ΝΑΙ, περίπου πόσες μεζούρες αλκοόλ πίνετε την εβδομάδα; (1 μεζούρα = 1 κουτί μύρα ή 1 ποτήρι κρασί ή μισό ποτό ή 1 σφηνάκι)

## ΜΕΡΟΣ ΔΕΥΤΕΡΟ

Μια γυναίκα έχει περισσότερες πιθανότητες να εμφανίσει καρκίνο του μαστού αν...  
 Βάλτε ✓ στις προτάσεις με τις οποίες συμφωνείτε. Μπορείτε να βάλετε ✓ σε περισσότερες από μία προτάσεις).

είναι ανύπαντρη	
είναι παντρευτεί αλλά δεν έχει παιδιά	
είναι παντρευτεί και έχει παιδιά	
είναι κάνει υστερεκτομή (αφαίρεση μήτρας)	
είναι συγγενείς που έχουν καρκίνο του μαστού	
είναι στην εμμηνόπαυση	
είναι παίρνει αντισυλληπτικά χάπια	
είναι έχει χτυπήσει στο στήθος	
δεν ξέρω	

2. Κατά προσέγγιση, οι πιθανότητες μιας γυναίκας να εμφανίσει καρκίνο του μαστού αυξάνονται σημαντικά όταν γίνεται ...  
 (Βάλτε ✓ σε μία μόνο από τις προτάσεις)

20 χρονών	
30 χρονών	
40 χρονών	
50 χρονών	
60 χρονών	
δεν ξέρω	

3. Τα περισσότερα παιδιά που εμφανίζονται στο στήθος είναι καρκίνοι.  
 Βάλτε ✓ σε μία μόνο απάντηση)

Ναι, είναι	
Όχι, δεν είναι	
δεν ξέρω	

4. Ποια είναι η καλύτερη χρονική στιγμή για την αυτοεξέταση του μαστού  
 (Βάλτε ✓ σε μία μόνο απάντηση)

Λίγο πριν την περίοδο	
Αμέσως μετά την περίοδο	
Στη μέση του κύκλου	

5. Γενικά, πόσο συχνά πρέπει μια γυναίκα να κάνει αυτοεξέταση μαστού  
 (Βάλτε ✓ σε μία μόνο απάντηση)

Μια φορά το μήνα	
Μήνα παρά μήνα	
Κάθε τρεις μήνες	
Μια φορά το χρόνο	
Δεν ξέρω	

## ΜΕΡΟΣ ΤΡΙΤΟ

Οι παρακάτω προτάσεις αναφέρονται στη μαστογραφία. Βάλτε ✓ στο κατάλληλο κουτάκι ανάλογα με το αν συμφωνείτε ή διαφωνείτε με κάθε πρόταση.

	ΣΥΜΦΩΝΩ	ΔΙΑΦΩΝΩ	ΔΕΝ ΞΕΡΩ
Η μαστογραφία μπορεί να εντοπίσει πολλά προβλήματα του στήθους που δεν είναι καρκίνοι και πολλά από αυτά δεν θα είχαν εντοπιστεί με άλλο τρόπο.			
Αν μία γυναίκα κάνει μαστογραφία και βγει "καθαρή", δεν χρειάζεται να ξανακάνει μαστογραφία.			
Η μαστογραφία μπορεί να βρει τον καρκίνο του μαστού μέχρι και δύο χρόνια πριν η ίδια η γυναίκα ή ο/η γιατρός της ανακαλύψει τον όγκο ή παρατηρήσει κάποια παθολογική αλλαγή στο στήθος.			
Η μαστογραφία είναι πιο κατάλληλη για νεώτερες γυναίκες, επειδή είναι πιο έγκυρη.			

## ΜΕΡΟΣ ΤΕΤΑΡΤΟ

Έχετε επιχειρήσει ποτέ να κάνετε αυτοεξέταση του μαστού;  
(Βάλτε σε κύκλο την απάντηση που ταιριάζει στην περίπτωσή σας)

ΝΑΙ

ΟΧΙ

**ΝΑΙ, ΠΑΡΑΚΑΛΩ ΑΠΑΝΤΗΣΤΕ ΤΙΣ ΕΡΩΤΗΣΕΙΣ 1., 2., 3. ΚΑΙ 4. Σ' ΑΥΤΗ ΤΗ ΣΕΛΙΔΑ.**

**ΟΧΙ, ΓΥΡΙΣΤΕ ΣΤΗΝ ΕΠΟΜΕΝΗ ΣΕΛΙΔΑ ΚΑΙ ΑΠΑΝΤΗΣΤΕ ΤΙΣ ΕΡΩΤΗΣΕΙΣ 5. ΚΑΙ 6.**

1. Πόσες φορές περίπου κάνατε αυτοεξέταση του μαστού τους περασμένους τρεις μήνες; (Βάλτε √ μόνο στην απάντηση που ταιριάζει στην περίπτωσή σας)

Καμία	
Μία φορά	
Δύο φορές	
Τρεις ή περισσότερες	

2. Πόσο συχνά κάνατε αυτοεξέταση μαστού τον περασμένο χρόνο; (Βάλτε √ μόνο στην απάντηση που ταιριάζει στην περίπτωσή σας)

Καθόλου	
Μία με δύο φορές	
Μήνα παρά μήνα	
Μια φορά το μήνα	

3. Βάλτε √ σε όσα από τα παρακάτω βήματα ακολουθείτε εσείς προσωπικά, όταν κάνετε αυτοεξέταση του μαστού (Μπορείτε να βάλετε √ σε περισσότερα από ένα βήματα)

Βάζετε το στήθος, όταν κάνετε μπάνιο ή ντους.	
Βάζετε το στήθος στον καθρέφτη προσεχτικά, έχοντας τα χέρια στη μέση.	
Βάζετε το στήθος στον καθρέφτη προσεχτικά με τα χέρια πίσω από το κεφάλι.	
Βάζετε το στήθος στον καθρέφτη προσεχτικά, έχοντας τα χέρια στην περιφέρεια.	
Βάζετε το στήθος στον καθρέφτη προσεχτικά, για να δείτε αν υπάρχει κάποιο πρήξιμο, μαθητική ανωμαλία ή αλλαγές στην εμφάνιση της θηλής.	
Ψαφίζετε το στήθος, όταν βρίσκεστε ξαπλωμένη.	
Βάζετε το ένα χέρι πάνω από το κεφάλι και εξετάζετε το στήθος σ' αυτή την πλευρά.	
Βάζετε, τοποθετείτε μια διπλωμένη πετσέτα ή ένα μαξιλάρι κάτω από τον ένα ώμο και εξετάζετε το στήθος σ' αυτή την πλευρά.	
Χρησιμοποιείτε το δεξί χέρι για να εξετάσετε το αριστερό στήθος και το αριστερό χέρι για να εξετάσετε το δεξί στήθος.	
Βάζετε το στήθος με κυκλικές κινήσεις, ακολουθώντας τη φορά των δεικτών του ρολογιού αρχίζοντας από έξω προς τα μέσα.	
Αν εξετάζετε το στήθος, ψειλαφέετε προσεκτικά, ψάχνοντας για ογκίδια ή σκληρά σημεία.	
Βάζετε ελαφρά τη θηλή σε κάθε στήθος, για να δείτε αν υπάρχει έκκριση.	

4. Έχετε κάνει ποτέ μαστογραφία; (Βάλτε √ μόνο στην απάντηση που ταιριάζει στην περίπτωσή σας)

Ναι	
Όχι	

**ΑΝ ΔΕΝ ΕΧΕΤΕ ΕΠΙΧΕΙΡΗΣΕΙ ΠΟΤΕ ΝΑ ΚΑΝΕΤΕ ΑΥΤΟΕΞΕΤΑΣΗ ΜΑΣΤΟΥ, ΠΑΡΑΚΑΛΩ  
ΑΠΑΝΤΗΣΤΕ ΤΙΣ ΕΡΩΤΗΣΕΙΣ 5. ΚΑΙ 6. Σ' ΑΥΤΗ ΤΗ ΣΕΛΙΔΑ**

Βάλτε √ σε όσα από τα παρακάτω βήματα πιστεύετε ότι οι γυναίκες γενικά θα έπρεπε να ακολουθούν, όταν κάνουν αυτοεξέταση μαστού (Μπορείτε να βάλετε √ σε περισσότερα από ένα βήματα)

Εξετάζετε το στήθος, όταν κάνετε μπάνιο ή ντους.	
Εξετάζετε το στήθος στον καθρέφτη προσεχτικά, έχοντας τα χέρια στη μέση.	
Εξετάζετε το στήθος στον καθρέφτη προσεχτικά με τα χέρια πίσω από το κεφάλι.	
Εξετάζετε το στήθος στον καθρέφτη προσεχτικά, έχοντας τα χέρια στην περιφέρεια.	
Εξετάζετε το στήθος στον καθρέφτη προσεχτικά, για να δείτε αν υπάρχει κάποιο πρήξιμο, ερματική ανωμαλία ή αλλαγές στην εμφάνιση της θηλής.	
Ψειλαφέετε το στήθος, όταν βρίσκεστε ξαπλωμένη.	
Απλώνετε, βάζετε το ένα χέρι πάνω από το κεφάλι και εξετάζετε το στήθος σ' αυτή την πλευρά.	
Απλώνετε, τοποθετείτε μια διπλωμένη πετσέτα ή ένα μαξιλάρι κάτω από τον ένα ώμο και εξετάζετε το στήθος σ' αυτή την πλευρά.	
Χρησιμοποιείτε το δεξί χέρι για να εξετάσετε το αριστερό στήθος και το αριστερό χέρι για να εξετάσετε το δεξί στήθος.	
Εξετάζετε το στήθος με κυκλικές κινήσεις, ακολουθώντας τη φορά των δεικτών του ρολογιού και αρχίζοντας από έξω προς τα μέσα.	
Όταν εξετάζετε το στήθος, ψειλαφέετε προσεκτικά, ψάχνοντας για ογκίδια ή σκληρά σημεία.	
Πιέζετε ελαφρά τη θηλή σε κάθε στήθος, για να δείτε αν υπάρχει έκκριση.	

Έχετε κάνει ποτέ μαστογραφία; (Βάλτε √ μόνο στην απάντηση που ταιριάζει στην περίπτωσή σας)

Ναι	
Όχι	

## ΜΕΡΟΣ ΠΕΜΠΤΟ

κάτω ακολουθούν κάποιες προτάσεις σχετικά με την υγεία του στήθους και άλλα θέματα υγείας.   
 Θε μία από τις προτάσεις βάλτε σε κύκλο το νούμερο που δείχνει πόσο συμφωνείτε ή διαφωνείτε με   
 πρόταση.

- 1 = Διαφωνώ εντελώς
- 2 = Διαφωνώ
- 3 = Συμφωνώ
- 4 = Συμφωνώ εντελώς

Η πιο ευάλωτη στον καρκίνο του μαστού, σε σχέση με άλλες ασθένειες.	1	2	3	4
Ο καρκίνος του μαστού είναι η πιο σοβαρή ασθένεια που θα μπορούσε να μου συμβεί,	1	2	3	4
Η αυτοεξέταση μαστού μπορεί να με κάνει να νιώσω αμηχανία ή/και ντροπή.	1	2	3	4
Να κάνω αυτοεξέταση μαστού είναι σαν να αρχίζω μια καινούργια συνήθεια, που μου φαίνεται δύσκολο.	1	2	3	4
Πιστεύω ότι η συστηματική σωματική άσκηση (τουλάχιστον τρεις φορές την εβδομάδα) μου κάνει καλό.	1	2	3	4
Να θεωρώ και πολύ πιθανό να αναπτύξω καρκίνο του μαστού κάποια στιγμή στη ζωή μου.	1	2	3	4
Εάν έχω προβλήματα με τη συγκοινωνία δεν θα πήγαινα να κάνω μαστογραφία.	1	2	3	4
Εάν παρουσίαζα καρκίνο του μαστού, αυτό θα είχε πολύ αρνητικές επιπτώσεις στη ζωή μου μέσα ή έξω από το σπίτι.	1	2	3	4
Να κάνω μια φορά μαστογραφία και βγει καθαρή, δεν χρειάζεται να ανησυχώ για το αποτέλεσμα μου από κει και πέρα.	1	2	3	4
Η αυτοεξέταση μαστού αυξάνει τις πιθανότητες για μια αποτελεσματική θεραπεία και πρόληψη για τις γυναίκες που αναπτύσσουν καρκίνο του μαστού.	1	2	3	4
Εάν η αυτοεξέταση μαστού γινόταν από περισσότερες γυναίκες, θα μειωνόταν οι θάνατοι που οφείλονται στον καρκίνο του μαστού.	1	2	3	4
Να πηγαίνω συχνά στον οδοντίατρο και για έναν προληπτικό έλεγχο αλλά και για να αντιμετωπίσω κριμένα προβλήματα.	1	2	3	4
Η αυτοεξέταση μαστού είναι χρονοβόρα διαδικασία και με απασχολεί από άλλες δραστηριότητες.	1	2	3	4
Εάν υπάρχουν τόσα άλλα πράγματα που θα μπορούσαν να μου συμβούν, που μοιάζει να μην μπορώ να σκέφτομαι το ενδεχόμενο να πάθω καρκίνο του μαστού.	1	2	3	4
Εάν έχω μεγαλύτερες πιθανότητες να αναπτύξω καρκίνο του μαστού σε σχέση με άλλες γυναίκες.	1	2	3	4
Να ανησυχώ πολύ μήπως πάθω καρκίνο του μαστού.	1	2	3	4
Πιστεύω ότι ο καρκίνος του μαστού μπορεί να θεραπευτεί εύκολα.	1	2	3	4
Η αυτοεξέταση μαστού μπορεί να δημιουργήσει ανησυχίες και να προκαλέσει ψυχολογική πίεση.	1	2	3	4
Με απασχολεί ότι η μαστογραφία μπορεί να πονέσει ή να προκαλέσει ενόχληση.	1	2	3	4
Η μαστογραφία μειώνει τις πιθανότητες να χρειαστεί ριζική αντιμετώπιση ή χειρουργική επέμβαση που θα αφήσει σωματική δυσμορφία στη γυναίκα που πάσχει από καρκίνο του μαστού.	1	2	3	4

- 1 = Διαφωνώ εντελώς  
 2 = Διαφωνώ  
 3 = Συμφωνώ  
 4 = Συμφωνώ εντελώς

Η αυτοεξέταση μαστού βοηθάει στην έγκαιρη διάγνωση και επομένως μειώνει τη θνητότητα της απαιτούμενης θεραπείας για τις γυναίκες που αναπτύσσουν καρκίνο του μαστού.	1	2	3	4
Η απασχολεί η ακτινοβολία από τη μαστογραφία.	1	2	3	4
Η αυτοεξέταση μαστού με κάνει να νιώθω ότι έχω τον έλεγχο σε σχέση με την υγεία μου.	1	2	3	4
Αν κάνω συχνά τεστ - Παπανικολάου (τεστ - Παπ).	1	2	3	4
Η μαστογραφία θα μπορούσε να εντοπίσει τον καρκίνο του μαστού, πριν ακόμα λυψώ εγώ ή ο/η γιατρός μου κάποιο ογκίδιο.	1	2	3	4
Η μαστογραφία μπορεί να με κάνει να νιώσω αμηχανία ή/και ντροπή.	1	2	3	4
Με αποφεύγω να καπνίζω πολύ και να πίνω πολλά οινοπνευματώδη ποτά.	1	2	3	4
Όσο περνούν τα χρόνια σκέφτομαι όλο και περισσότερο ότι μπορεί να αναπτύξω καρκίνο του μαστού.	1	2	3	4
Μου ήταν δύσκολο να λείψω από τη δουλειά ή να αφήσω τις υποχρεώσεις μου καλύτερα για να μπορέσω να πάω για μαστογραφία.	1	2	3	4
Ο καρκίνος του μαστού θα έβαζε σε κίνδυνο το γάμο μου (ή την ερωτική μου σχέση).	1	2	3	4
Ανώνηθως φοράω ζώνη ασφαλείας στο αυτοκίνητο.	1	2	3	4
Η μαστογραφία θα μπορούσε να εντοπίσει κάποια προβλήματα του στήθους σε πρώιμο στάδιο, όταν οι πιθανότητες για μια αποτελεσματική θεραπεία είναι πολύ μεγαλύτερες.	1	2	3	4
Ακολουθώ μια ισορροπημένη διατροφή.	1	2	3	4
Με πιστεύω ότι ξέρω πώς να κάνω σωστά αυτοεξέταση μαστού.	1	2	3	4
Η μαστογραφία είναι σήμερα εξέταση ρουτίνας.	1	2	3	4
Ο καρκίνος του μαστού μπορεί να αφήσει τη γυναίκα με μια όχι και τόσο ελκυστική εξωτερική εμφάνιση.	1	2	3	4
Η αυτοεξέταση μαστού μπορεί να μου προσφέρει τη διαβεβαίωση ότι δεν υπάρχει κανένα πρόβλημα και να με καθησυχάσει.	1	2	3	4
Με τη μαστογραφία υπάρχει μεγάλος κίνδυνος να οδηγηθεί κανείς σε χειρουργική επέμβαση, χωρίς να είναι απαραίτητο.	1	2	3	4
Αν είχα καρκίνο του μαστού, θα μπορούσε να κλονιστεί η οικονομική μου κατάσταση.	1	2	3	4
Η μαστογραφία είναι απαραίτητο να γίνεται τακτικά, για να έχει ο/η γιατρός αρκετές πληροφορίες στο ιστορικό μου σε περίπτωση που εμφανιστεί κάποιο πρόβλημα.	1	2	3	4
Η αυτοεξέταση μαστού μπορεί να πονέσει.	1	2	3	4
Η αυτοεξέταση μαστού μπορεί να προλάβει μελλοντικά προβλήματα με το στήθος.	1	2	3	4

Από πόσο θα μπορούσαν να σας επηρεάσουν οι παρακάτω πηγές στο να κάνετε αυτοεξέταση μαστού και να πάτε για μαστογραφία:

Για κάθε μία από τις παρακάτω πηγές βάλτε σε κύκλο το νούμερο που δείχνει πόσο θα μπορούσε να σας επηρεάσει.

- 1 = Καθόλου
- 2 = Λίγο
- 3 = Αρκετά
- 4 = Πάρα πολύ

- |  |   |   |   |   |
|--|---|---|---|---|
| 43. Σχετικό άρθρο σε περιοδικό (-α) / εφημερίδα (-ες).   | 1 | 2 | 3 | 4 |
| 44. Σχετικό τηλεοπτικό πρόγραμμα (-τα).  | 1 | 2 | 3 | 4 |
| 45. Ενημερωτικό φυλλάδιο(-α).  | 1 | 2 | 3 | 4 |
| 46. Σύσταση από κάποιον ειδικό (γιατρό, νοσοκόμα κλπ.).  | 1 | 2 | 3 | 4 |
| 47. Το να έχει πάει για μαστογραφία κάποιο μέλος της οικογένειας/συγγενής/φίλη.                  | 1 | 2 | 3 | 4 |
| 48. Το να έχει χάσει τη ζωή της κάποια συγγενής / φίλη / δημόσιο πρόσωπο από καρκίνο του μαστού. | 1 | 2 | 3 | 4 |

Παρακάτω ζητάμε τη γνώμη σας για την υγεία γενικά. Βάλτε σε κύκλο το νούμερο που περιγράφει πόσο συμφωνείτε ή διαφωνείτε με καθεμία από τις προτάσεις.

- 1 = Συμφωνώ εντελώς
- 2 = Συμφωνώ
- 3 = Μάλλον συμφωνώ
- 4 = Μάλλον διαφωνώ
- 5 = Διαφωνώ
- 6 = Διαφωνώ εντελώς

- |  |   |   |   |   |   |   |
|--|---|---|---|---|---|---|
| 1. Αν δεν έχεις την υγεία σου δεν έχεις τίποτα.                                  | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. Υπάρχουν άλλα πράγματα που με απασχολούν περισσότερο από την υγεία μου.       | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. Η υγεία παίζει πολύ μικρό ρόλο στο να είναι κάποιος ευτυχισμένος στη ζωή του. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. Δεν υπάρχει τίποτα πιο σημαντικό από την υγεία.                               | 1 | 2 | 3 | 4 | 5 | 6 |



## ΜΕΡΟΣ ΕΚΤΟ

Αυτό το μέρος ενδιαφερόμαστε για τα αισθήματα και τα συναισθήματά σας.  
 παρακάτω κλίμακα αποτελείται από λέξεις που περιγράφουν διάφορα αισθήματα και συναισθήματα.  
 Ψάξτε σε κύκλο τον αριθμό που εκφράζει το πώς νιώθετε για κάθε λέξη τους τελευταίους μήνες.

**1 = Πολύ Λίγο**  
**2 = Λίγο**  
**3 = Μέτρια**  
**4 = Πολύ**  
**5 = Πάρα Πολύ**

ενδιαφέρουσα	1	2	3	4	5	11. ευέξαπτη	1	2	3	4	5
πεισμένη	1	2	3	4	5	12. σε εγρήγορση	1	2	3	4	5
συναρπαστική	1	2	3	4	5	13. ντροπιασμένη	1	2	3	4	5
ανήσυχη	1	2	3	4	5	14. με έμπνευση	1	2	3	4	5
δυνατή	1	2	3	4	5	15. νευρική	1	2	3	4	5
ένοχη	1	2	3	4	5	16. αποφασιστική	1	2	3	4	5
τρομαγμένη	1	2	3	4	5	17. επιμελής	1	2	3	4	5
εχθρική	1	2	3	4	5	18. αναστατωμένη	1	2	3	4	5
ενθουσιώδης	1	2	3	4	5	19. δραστήρια	1	2	3	4	5
περήφανη	1	2	3	4	5	20. φοβισμένη	1	2	3	4	5

## ΜΕΡΟΣ ΕΒΔΟΜΟ

αυτό το τμήμα του ερωτηματολογίου μάς ενδιαφέρουν οι απόψεις σας για θέματα υγείας και οι τρόποι με τους οποίους αντιμετωπίζετε εσείς τα συνηθισμένα και καθημερινά προβλήματα υγείας.

Για κάθε μία από τις παρακάτω προτάσεις βάλτε σε κύκλο το νούμερο που δείχνει πόσο συμφωνείτε ή διαφωνείτε με την πρόταση. Δεν υπάρχουν σωστές και λάθος απαντήσεις.

- 1 = Συμφωνώ εντελώς
- 2 = Συμφωνώ
- 3 = Μάλλον συμφωνώ
- 4 = Μάλλον διαφωνώ
- 5 = Διαφωνώ
- 6 = Διαφωνώ εντελώς

Αν αρρωστήσω, είναι η δική μου συμπεριφορά που καθορίζει πόσο γρήγορα θα γίνω καλά.	1	2	3	4	5	6
Ό,τι και να κάνω, δεν γίνεται να μην αρρωστήσω.	1	2	3	4	5	6
Το να πηγαίνω συχνά στο γιατρό, είναι ο καλύτερος τρόπος για να αποφύγω τις ασθένειες.	1	2	3	4	5	6
Τα περισσότερα πράγματα που επηρεάζουν την υγεία μου είναι τυχαία.	1	2	3	4	5	6
Όταν δεν νιώθω καλά στην υγεία μου, πρέπει να συμβουλευτώ το γιατρό.	1	2	3	4	5	6
Έχω την υγεία μου κάτω από τον έλεγχό μου.	1	2	3	4	5	6
Στο αν θα αρρωστήσω ή όχι η οικογένειά μου παίζει μεγάλο ρόλο.	1	2	3	4	5	6
Όταν αρρωσταίνω, το σφάλμα είναι αποκλειστικά δικό μου.	1	2	3	4	5	6
Η τύχη παίζει καθοριστικό ρόλο στο πόσο γρήγορα αναρρώνω από μία ασθένεια.	1	2	3	4	5	6
Οι γιατροί έχουν τον απόλυτο έλεγχο πάνω στην υγεία μου.	1	2	3	4	5	6
Το να διατηρούμαι σε καλή υγεία είναι καθαρά θέμα τύχης.	1	2	3	4	5	6
Ο σημαντικότερος παράγοντας που επηρεάζει την υγεία μου είναι αυτά που κάνω εγώ η ίδια.	1	2	3	4	5	6
Αν φροντίζω την υγεία μου, μπορώ να αποφύγω τις ασθένειες.	1	2	3	4	5	6
Η ανάρρωσή μου από μια ασθένεια οφείλεται στη φροντίδα κάποιων άλλων ανθρώπων (π.χ. γιατρών, νοσοκόμων, μελών της οικογένειας, φίλων).	1	2	3	4	5	6
Ό,τι και να κάνω, υπάρχει πάντα η πιθανότητα να αρρωστήσω.	1	2	3	4	5	6
Αν είναι γραφτό να παραμείνω υγιής, θα παραμείνω.	1	2	3	4	5	6
Αν πάρω τα κατάλληλα μέτρα, μπορώ να παραμείνω υγιής.	1	2	3	4	5	6
Όσον αφορά στην υγεία μου, το μόνο που μπορώ να κάνω είναι να ακολουθώ τις συμβουλές του γιατρού.	1	2	3	4	5	6

παρακάτω προτάσεις έχουν να κάνουν με το πώς εσείς αντιμετωπίζετε τα συνηθισμένα και καθημερινά προβλήματα με την υγεία σας.

Κάθε πρόταση βάλτε σε κύκλο το νούμερο που δείχνει πόσο πολύ ή λίγο χρησιμοποιείτε αυτούς τους πούς.

- 1 = Σχεδόν ποτέ
- 2 = Σπάνια
- 3 = Μερικές φορές
- 4 = Σχεδόν πάντα

**ΤΑΝ ΕΧΩ ΝΑ ΑΝΤΙΜΕΤΩΠΙΣΩ ΣΥΝΗΘΙΣΜΕΝΑ Ή ΚΑΘΗΜΕΡΙΝΑ ΠΡΟΒΛΗΜΑΤΑ ΜΕ ΤΗΝ ΥΓΕΙΑ ΜΟΥ ...**

Νιώθω μεγάλη συναισθηματική πίεση και αφήνω τα συναισθήματά μου να κλάσουν.	1	2	3	4
Προσπαθώ να πάρω συναισθηματική υποστήριξη από συγγενείς και φίλους.	1	2	3	4
Γνω ή παίρνω φάρμακα ή/και ναρκωτικά, για να μην το σκέφτομαι.	1	2	3	4
Γαθαίνω να ζω με το πρόβλημα.	1	2	3	4
Προσπαθώ να ξεχαστώ για λίγο πίνοντας οινόπνευματώδη ή παίρνοντας φάρμακα ή/και ναρκωτικά.	1	2	3	4
Αγκεντρώνομαι και προσπαθώ να κάνω κάτι.	1	2	3	4
Αναστατώνομαι όταν σκέφτομαι αυτό που έπαθα.	1	2	3	4
Προσποιούμαι ότι δεν έχει συμβεί στ' αλήθεια.	1	2	3	4
Κάνω ό,τι χρειάζεται να γίνει, προχωρώντας σταδιακά.	1	2	3	4
Πίνω αλκοόλ και παίρνω φάρμακα ή/και ναρκωτικά για μην σκέφτομαι το πρόβλημα και τόσο πολύ.	1	2	3	4
Αναστατώνομαι και το ξέρω.	1	2	3	4
Κάνω ακόμα περισσότερες προσπάθειες για να απαλλαγώ από το πρόβλημα.	1	2	3	4
Μιλάω με κάποιον για το πώς νιώθω.	1	2	3	4
Πίνω αλκοόλ και παίρνω φάρμακα ή/και ναρκωτικά για να νιώσω καλύτερα.	1	2	3	4
Παραδέχομαι πως ό,τι έγινε έγινε και πως δεν μπορεί να αλλάξει.	1	2	3	4
Συζητάω με κάποιον για τα συναισθήματά μου.	1	2	3	4
Αρνούμαι να πιστέψω αυτό που μου έχει συμβεί.	1	2	3	4
Ταράζομαι και αφήνω τα συναισθήματά μου να ξεσπάσουν.	1	2	3	4
Βρίσκω κατανόηση και συμπόνοια από κάποιον άλλο.	1	2	3	4
Κάνω οργανωμένες προσπάθειες για να λύσω το πρόβλημα.	1	2	3	4
Αφήνω τα συναισθήματά μου να ξεσπάσουν.	1	2	3	4
Φέρομαι σαν να μη συμβαίνει τίποτα.	1	2	3	4
Λέω στον εαυτό μου "δεν μπορεί να είναι αλήθεια".	1	2	3	4
Παραδέχομαι ότι αυτό που μου συμβαίνει είναι πραγματικό.	1	2	3	4