The development and initial evaluation of a **G**oal setting and **A**ction **P**lanning (G-AP) framework for use in community based stroke rehabilitation

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Declaration

I hereby declare that this thesis embodies the results of my own research and that I am the full author of this thesis, except where otherwise stated.

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Abstract

Background

Goal setting is accepted 'best practice' in stroke rehabilitation however, there is no consensus about what the key components of goal setting interventions are, how they should be optimally delivered in practice and how best to involve stroke survivors in the process. This PhD by publication describes the development and initial evaluation of a theory-based goal setting and action planning framework (G-AP) to guide goal setting practice in community based stroke rehabilitation settings.

Included studies

The Medical Research Council (MRC) framework for developing and evaluating complex interventions guided the development and conduct of a programme of research which included the following studies:

(i) a **review of the literature** to identify theories of behaviour change with most potential to inform goal setting practice (Paper 1)

(ii) a **causal modelling exercise** to map identified theoretical constructs onto a goal setting process and convening of a multi-disciplinary **task group** to develop the theoretical process into a **G**oal setting and **A**ction **P**lanning (G-AP) practice framework (Paper 2)

(iii) a **process evaluation** of the G-AP framework in one community rehabilitation team (Paper 3)

(iv) a **United Kingdom (UK) wide survey** to investigate the nature of services providing community based stroke rehabilitation across the UK and what

goal setting practice is in these settings in order to understand the context into which an evaluation of the G-AP framework could be introduced (Paper 4)

Main Findings

The **review of the literature** identified three theories of behaviour change that offered most potential to inform goal setting practice: Social Cognitive Theory, Health Action Process Approach and Goal Setting Theory. These theories contained constructs directly relevant to the goal setting practice: self-efficacy, outcome expectancies, goal attributes, action planning, coping planning and appraisal and feedback. The **causal modelling** and **Task group exercise:**

(i) Informed development of the G-AP framework into a four stage, cyclical process that included (i) goal negotiation and setting (ii) planning and measuring confidence (iii) action and (iv) appraisal, feedback and decision making.

(ii) Proposed mechanisms of action: successful completion of action plans resulting in incremental improvements in goal sub-skills and self-efficacy.

(iii) Predicted outcomes G-AP was likely to impact on: goal attainment and improved rehabilitation outcomes.

The **process evaluation** suggested that each stage of the G-AP framework had a distinct purpose and made a useful contribution to the overall process. Overall, G-AP was acceptable and feasible to use but implementation of novel aspects of the

framework (coping planning and measuring confidence) was inconsistent and health professionals had concerns about the potential impact of unmet goals on patients' wellbeing. Patient reports suggested that (i) the experience of goal non-attainment could facilitate adjustment to limitations resulting from stroke and (ii) feeling involved in the goal setting process can incorporate both patient-led and professional-led approaches.

The **survey** findings highlighted the variability that exists in community based stroke rehabilitation services in the UK (e.g. the patients they see; the input they provide). Goal setting is reportedly used with all or most stroke survivors in these services; however, practice is variable and may be sub-optimal.

Conclusions

G-AP is the first practice framework which has been explicitly developed to guide health professionals through a systematic, theoretically based and patient centred goal setting process in community based stroke rehabilitation. G-AP is a cyclical process that that has four key stages, proposed mechanisms of action and has shown promise as an acceptable, feasible and effective framework to guide goal setting practice. The complexity that exists within community based stroke rehabilitation services, and the variability in usual goal setting practice used within them, should be considered when designing a study to evaluate the effectiveness of G-AP in routine practice.

Prologue - Why embark upon this PhD?

My career as an occupational therapist has spanned over twenty years. During that time, I have worked mostly with people recovering from, and trying to rebuild their lives after, the often devastating consequences of stroke. I have always worked within multi-disciplinary teams and with people at all stages of the stroke care pathway (from acute assessment units to in-patient stroke unit care and latterly in community based stroke rehabilitation). During my career, one feature of my clinical practice has remained a constant - setting and working towards rehabilitation goals. What has changed over time is my goal setting practice.

As my career progressed, I realised that goal setting offered a powerful way of engaging patients in the rehabilitation process and targeting interventions to their personal needs and circumstances. By working with patients on goals that were important to them, rehabilitation interventions were tailored and noticeably different from 'usual' practice. Furthermore, the multi-disciplinary team worked with patients and their significant others in a different way.

Consider this case study of a man I saw whilst he was in the stroke unit in 2004. His name has been changed to maintain anonymity.

> Jim was a 75 year old man admitted to the stroke unit with a moderate left hemiparesis. Prior to having the stroke, Jim was fully independent and lived with his wife. Following our multi-disciplinary

assessment, we established that Jim could not walk or transfer independently, requiring the moderate assistance of one (skilled) person at all times. He had no cognitive, communication or perceptual deficits. He presented as being very quiet and reserved. We did not know if this was typical for him, or if low mood was becoming an issue following the stroke. His wife was very caring, if a little anxious, and visited every day.

The team set goals for Jim in the multi-disciplinary team meeting. They focused on his mobility as we knew his main goal was to get back home. To achieve this, his wife would need to be able to help Jim by herself (she did not want carers coming into the house). Jim was making good progress. We were happy that his rehabilitation was going well. He was progressing towards therapy goals and we were aiming to do a home visit the following week. But Jim's mood appeared to be getting worse. I decided to spend some time talking to Jim to try and get to know him better. We talked about where he grew up, where he lived now, his garden… then, quite unexpectedly, he told me about his daughter who had died the previous year. He started to cry when he told me that the anniversary of her death was the following week and he really wanted to go to visit her grave side and lay flowers. But he felt so helpless, there was no way he was going to be able to do that - he looked extremely sad.

Jim had a clear personal goal which we very nearly missed – he wanted to lay flowers at his daughter's grave on the anniversary of her death. On hearing this (and after acknowledging how he was feeling and noting the importance of this goal), Jim and I started to think about how he could achieve it. What followed was a series of activities involving Jim, his wife and members of the multi-disciplinary team. These included talking to Jim's wife about how she felt about the visit (she wanted to go too); practising car transfers in the hospital car park (myself and the physiotherapist); a visit (by myself) to the graveyard to check access, arranging for the clothes to brought into the hospital that Jim wanted to wear for the visit and arranging with his wife to buy the flowers (nursing staff). The consultant chatted to Jim about the pending visit on his next ward round.

The following week Jim, his wife and I went to the cemetery. I helped Jim to transfer from the car to the wheelchair as his wife was not confident enough to do this yet. Jim's wife pushed him in his wheelchair to the grave side. They spent about fifteen minutes together in their private thoughts and conversation. On their return, we got back into the car and drove back to the hospital. Jim chatted to me about familiar places as we passed by. He did not seem to

want or need to talk about the visit. He appeared to be at ease as did his wife who was looking out of the window in the back seat of the car.

In the multi-disciplinary meeting later that week, I reported back about the outcome of the visit. The nursing staff reported that Jim's mood appeared to be brighter and the consultant made a special point of thanking me for taking Jim to the cemetery. What struck me after the meeting was that Jim was typical of the types of patients that we saw. But the goal we had set (Jim will go to the cemetery and lay flowers at his daughter's grave on the anniversary of her death) was not typical. Neither was the rehabilitation interventions or team work that followed – it was notably different.

This and many other clinical experiences like it convinced me that the process of discussing, setting and working towards rehabilitation goals that reflected patient's priorities was crucially important. I believed it was the primary process through which multi-disciplinary team input could be focused and tailored to each person challenged with dealing with life after stroke. However, it was difficult to implement in a co-ordinated, coherent and consistent way. At that time, the key issue for me was not *if* we should be setting goals with patients, but *how* we should go about it. How can we avoid missing patient's important goals? Who should set the goals – the health professional, the team, the patient, the carer or a combination? How should goals be worded - using professional language or terms understood by the patient? How should the team organise itself around the goal setting process? How can we predict

what goals are achievable and what goals are not? How should situations where patients do not meet their goals be managed?

As a practicing clinician, these were important questions I felt needed to be answered to inform a goal setting process that was 'fit for purpose'. Patients should have the best opportunity to identify and work towards the goals that are uniquely important to them – not by chance – but as a matter of course. This prompted me to complete a clinically informed review of the goal setting literature.

At that time (2004) I found a series of papers written by Professor Derek Wade entitled - Goal planning in stroke rehabilitation: Why? (Wade, 1999a); Goal planning in stroke rehabilitation: What? (Wade, 1999b); Goal planning in stroke rehabilitation: How? (Wade, 1999c) and Goal planning in stroke rehabilitation: Evidence (Wade, 1999d). These papers provided a rationale for why goal planning is important (*to ensure rehabilitation is efficient and effective and to coordinate team work around individual patients*); what it actually is (*the process of setting goals in the long, medium and short term*); how to go about it using the Rivermead Rehabilitation Centre method as an exemplar (*identify patient and carer expectations, conduct goal planning meetings (without patient present) and document goals on a goal planning sheet*); and what the evidence was to support it (*no evidence identified in stroke rehabilitation, limited evidence from other areas*). Wade's summary in the final paper of the series included the following points (Wade, 1999d):

- changing patient's behaviour is central to rehabilitation
- involving patients in the goal planning facilitates behaviour change
- goals should be meaningful and challenging but achievable
- family member involvement in the process should be considered
- short and long term goals should be set
- goals should be set at the level of the team and the individual clinician
- using Goal Attainment Scaling[1] could result in health professionals focusing on achievable goals with concrete measurable outcomes
- there is a goal setting evidence-practice gap in rehabilitation.

As an occupational therapist working in a stroke unit setting, these papers provided useful information to inform practice. They underlined the importance of goal setting and patient involvement, described a goal setting approach used in one clinical setting (including documentation used to support it) and acknowledged the importance of changing patients' behaviour. However, important questions remained unanswered. How can health professionals influence behaviour change? How can patients (and carers) be optimally involved in the process? What differentiates a long term goal from a short term goal? I realised that in the absence of a sound evidence base, these questions would be difficult to answer and that goal setting practice would have to rely heavily on clinical judgement and experience.

In 2005 my place of work changed from the stroke unit to a community rehabilitation team. I worked as part of a multi-disciplinary team providing rehabilitation services to stroke survivors, under the 65 years of age, living in the community. In that year, I also

[1] Goal Attainment Scaling: A method of defining and measuring attainment of rehabilitation goals (Bovend'eerdt, Botell, & Wade, 2009). GAS is discussed further in section 2.5.2, pg. 19.

successfully applied for a Clinical Research Fellowship with the Alliance for Self Care Research at the University of Stirling. In our first meeting my supervisor, Professor Sally Wyke, asked me what topic areas I was interested in researching. There was no question in my mind what I wanted to focus on – optimising goal setting practice in stroke rehabilitation settings. What followed was a series of studies, grant applications and subsequent publications which together have resulted in this thesis to support a PhD by publication.

Background to submission

The aim of this background section is to provide a brief overview of stroke and its impact (section 2.1), rehabilitation (sections 2.2-2.4) and goal setting (sections 2.5-2.6). I underline why it was important to embark upon this programme of research and conclude by stating what the aims of the thesis are (section 2.7).

2.1 The impact of stroke

Stroke has become known as a 'brain attack' which is caused by a disruption in the blood supply to the brain (Department of Health, 2007). The blood supply can be interrupted due to a clot restricting or blocking blood supply to the brain (ischaemic stroke) or due to a blood vessel bursting in the brain and producing bleeding (haemorrhagic stroke) (Department of Health, 2007).

Although significant advances have been made in the acute management of stroke, it remains the largest cause of adult complex disability in the United Kingdom (Adamson et al., 2004). The incidence of stroke increases with age. However, twenty five percent of strokes occur in people who are under the age of 65 (National Audit Office, 2005). Most of the NHS expenditure for stroke care is directed towards community based (rather than hospital based) stroke care and rehabilitation (National Audit Office, 2005). The process of recovery from stroke is often complex for both the stroke survivor and their carers (Bulley et al., 2010; Hafsteinsdottir & Grypdonck, 1997).

2.2 Defining rehabilitation

Rehabilitation is difficult to define as it includes many different activities, that occur in varying contexts (e.g. hospital, home or community settings) and in relation to a wide range of health conditions (Wade, 2005a). The World Health Organisation (WHO) (World Health Organisation, 2004) defined rehabilitation as:

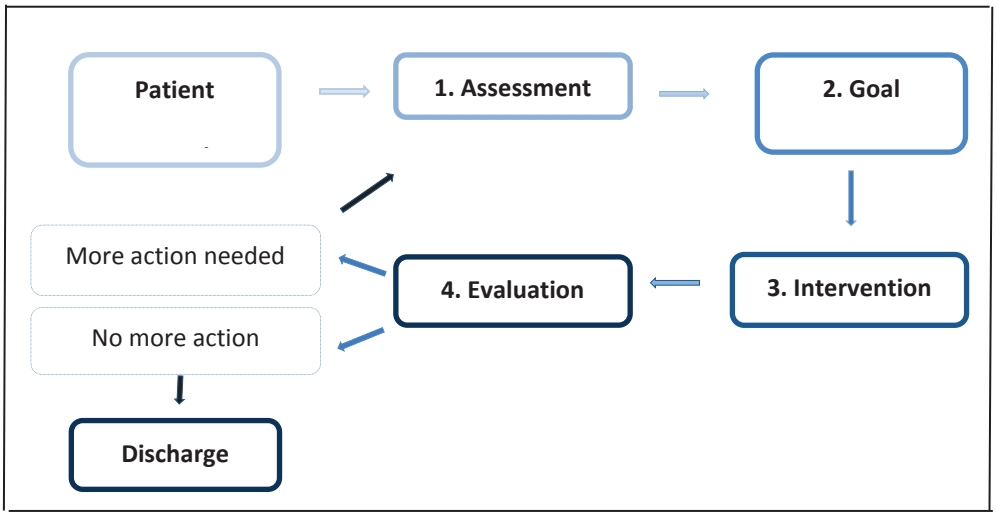
> *"A proactive and goal-oriented activity to restore function and/or to maximize remaining function to bring about the highest possible level of independence, physically, psychologically, socially and economically. It involves combined and coordinated use of medical, nursing and allied health skills, along with social, educational and vocational services, to provide individual assessment, treatment, regular review, discharge planning and follow-up. Rehabilitation is concerned, not only with physical recovery, but also with psychological and social recovery and reintegration (or integration) of the person into the community."* (WHO, 2004)

This definition underlines the importance of goals to orientate the rehabilitation process and coordinated services providing tailored interventions. It also recognises that recovery goes beyond physical recovery and includes psychological and social recovery and reintegration into community life.

Wade (2005a) proposed a model of the rehabilitation process comprising four key stages: 1. Assessment, 2. Goal setting, 3. Intervention, and 4. Evaluation (see Figure 1). Goal setting is an integral part of the rehabilitation process and informs the interventions that follow. According to Wade's model the process continues until no

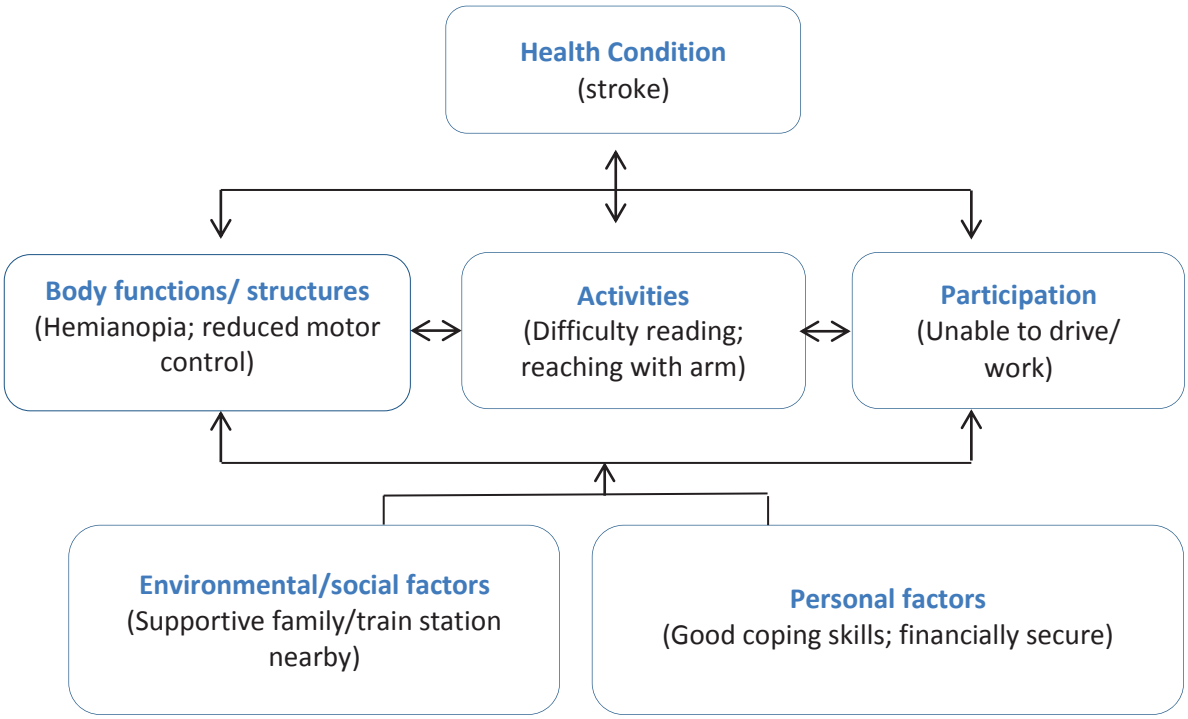
more action is required at which point the patient is discharged with support in place if required.

Figure 1. The Rehabilitation Process (adapted from Wade 2005a)



Wade suggests (2005a) that the World Health Organisation International Classification of Functioning, Disability and Health (WHO-ICF) (World Health Organization, 2001) is a useful model to conceptualise illness and disability and classify the focus and target of rehabilitation interventions. The WHO-ICF aims to provide a common language for describing functioning, disability and health. It conceptualises health and disability as an interaction between various components; the health condition; body functions/structures; activities (execution of a task or action), participation (in a life situation) and contextual factors (both personal and environmental). An example of the interplay of ICF components for a person recovering from stroke is illustrated in Figure 2. Wade has argued that rehabilitation interventions can, and should, be targeted within any of the ICF components (Wade, 2005a).

Figure 2. WHO-International Classification of Functioning, Disability and Health



Rehabilitation is recognised as a core component of stroke care. The Royal College of Physicians Intercollegiate Stroke Working Party (2012) state that stroke rehabilitation services should aim to:

> *"Reduce impairment, promote recovery and increase ability to participate and improve quality of life using adaptive rehabilitation strategies."* (Royal College of Physicians, 2012)

The Department of Health National Stroke Strategy (2007) stated:

> *"Individuals affected by stroke and their relatives need to receive good-quality, appropriate, tailored and flexible rehabilitation: this will*

> *affect long-term recovery and reduce long-term disability. Stroke is a condition that can improve over many years, so people need both a focus on rehabilitation, to help them improve and recover, and support, to help them manage the disabling factors caused by a stroke that may continue in the long term."* (National Stroke Strategy, 2007)

Rehabilitation is therefore a central feature of stroke care and a key component of rehabilitation is setting and working towards rehabilitation goals. A strong evidence base exists to support the overall effectiveness of rehabilitation in reducing disability and increasing independence in activities of daily living after stroke (Legg L, 2002; Outpatient Service Trialists, 2003; Langhorne et al., 2005; Stroke Unit Trialists' Collaboration, 2013). However, what the key components of effective rehabilitation are is less clear (DeJong et al., 2005; Quinn et al., 2009).

2.3 The influence of health and social care policy on rehabilitation

Over the last five to ten years there has been a major shift in how we approach rehabilitation in the UK. This has largely been driven by policy initiatives from the Scottish Government and the Department of Health (Department of Health, 2009; The Scottish Government, 2010). The thrust of these initiatives has been to progress from a medically driven, paternalistic approach to health care to a person (and carer) centred approach based on partnership working and shared responsibility for improving health outcomes.

There has also been a move away from reactive, episodic hospital based care to preventative, anticipatory community based care (Department of Health, 2006; NHS Scotland, 2005) and a clear focus on enabling and empowering people to manage their own conditions through self-care and supported self-management (Department of Health, 2009; Scottish Government 2008). In England, there has been the added introduction of Practice Based Commissioning which has given General Practitioners more responsibility for 'buying in' or commissioning services for their patients. Subsequently, rehabilitation services have to demonstrate their value to commissioning bodies to ensure their continued use (Department of Health, 2013).

A report by NHS Improving Quality (2014) entitled, 'Improving Adult Rehabilitation Services in England' identified six common elements of improved rehabilitation service provision. These were: 1. Integrated health and social care service models; 2. Single point of assessment or referral; 3. Early intervention to improve outcomes and recovery times; 4. Self-Management of health conditions; 5. Self-referral into services and 6. A flexible workforce involving broad range of skills and wide skill mix.

In Scotland, these new approaches to health care are reflected in the rehabilitation policy document, Co-ordinated, Integrated and Fit for Purpose: The Delivery Framework for Adult Rehabilitation in Scotland (Scottish Executive, 2007). This framework puts rehabilitation at the "*heart*" of health and social care delivery in Scotland and emphasises the need for a person and carer centred approach which should aim to optimise patient autonomy and self-management throughout the

rehabilitation process. The framework underlines the importance of a holistic model of rehabilitation which takes account of the physical, psychological, emotional and social needs of people receiving rehabilitation services. It also supports rehabilitation being delivered close to home rather than in hospital settings.

Current policy initiatives within the Scottish Government and the Department of Health are focusing on the integration of health and social care to achieve seamless health and social care provision (Department of Health n.d[2].; Department of Health 2005; Scottish Government n.d.).

All of the aforementioned policies influence how, where and by whom rehabilitation is delivered. They also result in changing contexts for the delivery of stroke rehabilitation interventions.

2.4 Defining goal setting in the context of rehabilitation

Goal setting is recognised as a fundamental component of the rehabilitation process (Wade, 2005a; Wade, 2005b; Playford et al., 2009), a core skill of rehabilitation practitioners (Wade & de Jong, 2000) and is recommended in national clinical guidelines for stroke rehabilitation (National Institute for Health and Care Excellence 2013; Royal College of Physicians Intercollegiate Stroke Working Party, 2012; The Scottish Intercollegiate Guidelines Network, June 2010). However, there is no universally accepted definition of goal setting (Playford et al., 2009). Variable

[2] n.d. no date

terminology has been used to describe both the process of setting and working towards rehabilitation goals (e.g. goal setting, goal planning, care planning, rehabilitation planning etc.) and the actual goals set (e.g. long term goals, short term goals, aims, objectives, action plans, targets etc.).

The Royal College of Physicians Intercollegiate Stroke Working Party (2012) define goal setting as:

> *"The identification of, and agreement on, a target which the patient, therapist or team will work towards over a specified period of time*."
> (RCP Guidelines for Stroke, 2012)

This definition recognises that goal setting is a complex process involving different activities (*identification, agreement, working towards*) and people (*patient, therapist, team*), that unfolds over a specific time period.

Levack and Siegert (2014a, pg. 11) have recently proposed revised definitions of key terms used in the context of rehabilitation. Abbreviated versions of these definitions are as follows:

- **Rehabilitation Goal**: A desired state to be achieved by a person as a result of rehabilitation activities.
- **Goal setting or goal planning**: The establishment or negotiation of rehabilitation goals.

- **Goal Pursuit**: Activities beyond the selection of rehabilitation goals that are implemented in order to enhance the level of goal attainment or to maximise the person's likelihood of achieving a particular rehabilitation goal.

In proposing these definitions, Levack and Siegert (2014a) have made a clear distinction between goal setting and goal pursuit thus highlighting that goal setting is only one part of the process and that action is needed in the pursuit of rehabilitation goals.

Within this thesis the term 'goal setting' is used in a broad sense to describe the whole process of setting *and* working towards (or pursuing) rehabilitation goals. It is understood that (i) this process will evolve differently for each person over time (ii) will incorporate different activities at different stages of the process and (iii) will involve different people including the patient, their family members/ carers and the health and social care staff involved in delivering their care.

2.5 Goal setting practice in rehabilitation: The current state of play

Goal setting is firmly embedded within rehabilitation practice in general (Holliday et al., 2005) and community based stroke rehabilitation in particular (Scobbie et al., 2014). However, goal setting practice is highly variable (Holliday et al., 2005; Scobbie et al., 2014). It can also be used for different (and sometimes unrelated) purposes, for example - to provide direction in rehabilitation, to evaluate outcomes, to improve

teamwork, to enhance client centred rehabilitation or to meet professional standards (Levack et al., 2006b).

There is a lack of consensus about which goal setting methods are most beneficial in improving the process and outcome of rehabilitation (Evans, 2012; Playford et al., 2009). However, there is evidence to suggest that increasing patient (and carer) involvement in the process can optimise partnership working and patient centred care (Wagner et al., 2005; Playford et al., 2009; Rosewilliam et al., 2011). Whilst desirable, this can be difficult to achieve in practice. Co-ordinating team efforts around patient centred goals can be challenging and fraught with clinical dilemmas (Playford et al., 2000; Borell et al., 2002; Armstrong, 2008; Sugavanam et al., 2013). This may go some way to explaining why Siegert et al. (2004a) stated:

> "*The goal setting process for many patients (and clinicians) is marked by frustration, difficulty and perceived failure."* (Siegert et al., 2004a)

2.5.1 A brief overview of approaches to goal setting used in rehabilitation

Since the 1990s, many approaches to goal setting have been identified (W. M. M. Levack & Siegert, 2014b). Some approaches are descriptions of goal setting practices used in specific service settings that could act as exemplars for others to use, for example the approach used at the Rivermead Rehabilitation Centre in Oxford (McGrath et al. 1995) or the Wolfson Neurorehabilition Centre in London (McMillan & Sparkes, 1999). Other approaches have been described which aim to enhance patient

participation in the goal setting process (Arnetz et al., 2004; Bornman & Murphy, 2006; Dalton et al., 2012; Holliday et al., 2007b). Approaches targeted at specific aspects of the goal setting process are also evident in the literature. For example, Goal Management Training is a meta cognitive intervention which aims to reduce errors in the goal pursuit phase and Identity Orientated Goal Training is an alternative approach to identifying person centred rehabilitation goals involving the use of metaphors (McPherson et al., 2009). Finally, goal setting approaches have been described within self-management (work-book based) interventions designed for use with people recovering from stroke (Johnston et al., 2007; Jones et al. , 2009; McKenna et al., 2013).

These approaches can guide health professionals in aspects of their goal setting practice. However, none have been specifically designed as a framework to guide health professionals' goal setting practice in community based stroke rehabilitation settings.

2.5.2 Goal setting and outcome measurement

In rehabilitation settings, goals are also used as a baseline against which progress can be measured. Three commonly used ways of doing this will be described (i) SMART goals (ii) Goal Attainment Scaling and (iii) the Canadian Occupational Performance Measure.

SMART generally refers to goals that are: **S**pecific; **M**easurable, **A**chievable, **R**elevant and have a **T**ime frame attached, although many variations of the words attached to each letter have been noted (Wade, 2009). The features of a SMART goal allow judgements to be made as to whether the goal has been achieved or not. Consequently, SMART goals can be used as a bench mark to measure goal attainment. Bovend'eerdt et al. (2009) have described a method for writing SMART goals which involves (i) specifying a target activity or behaviour (ii) specifying the support needed (iii) quantifying the performance and (iv) specifying a time period the goal should be completed by. The authors' give the following example of a SMART goal:

> "*To wash in the shower with verbal prompting using a long-handled sponge in 15 minutes on a daily basis using a checklist within four weeks*." (Bovend'eerdt et al., 2009)

Using the SMART criteria is viewed as the "*ideal*" way to write a rehabilitation goal (Wade, 2009). However, there is growing concern that an over emphasis on SMART goals may be unhelpful or even counterproductive in some cases. For example, in an effort to make goals achievable, health professionals may assume a dominant rather than collaborative role within the goal setting process (Barnard et al., 2010) and set goals that may not reflect the hopes and aspirations of some patients (Playford et al., 2009).

Setting SMART goals is an important first step in the process of **G**oal **A**ttainment **S**caling (GAS) which is a method of scoring and quantifying the achievement of goals

(Bovend'eerdt et al., 2009; Turner-Stokes, 2009). Prior to starting the rehabilitation intervention, goals are set on a 5 point scale with **zero** indicating the expected level of goal attainment; **+1** and **+2** indicate higher, and much higher, than expected levels of goal achievement; and **-1** and **-2** indicate lower, and much lower, than expected levels of goal attainment. At a pre-determined review date, the outcome score for each goal is rated (by the team and the patient/ carers) by judging actual patient performance against the predefined levels. Bovend'eerdt et al. (2009) demonstrate how the above noted goal can be set using the five point GAS scale (see Box 1).

Box 1. Goal setting using GAS

+2: To independently wash in the shower in 15 minutes on a daily basis within four weeks.

+1: To wash in the shower with a long-handled sponge in 15 minutes on a daily basis within four weeks.

Zero: To wash in the shower with verbal prompting using a long-handled sponge in 15 minutes on a daily basis using a checklist within four weeks.

-1: To wash in the shower with physical assistance of one person on a shower chair within four weeks (current status).

-2: To wash in the shower with physical assistance of one person on a shower wheelchair within four weeks.

Goal Attainment Scaling has been recommended as a sound measure of outcome in physical rehabilitation settings (Hurn et al., 2006). However, there are limitations to its use in routine clinical practice. Turner-Stokes stated (2009)

> *"Goal attainment scaling depends on two things: the patient's ability to achieve their goals and the clinician's ability to predict outcome, which requires knowledge and experience."* (Turner-Stokes, 2009)

This poses a significant challenge, particularly in stroke rehabilitation settings. The complexity of the condition and the potential presence of co-morbidities can make it unclear at the outset what a patient's potential is. Additionally, predicting specific outcomes (which is a requirement of GAS albeit over 5 levels) is difficult, even for the most experienced clinician. Finally, negotiating, setting and documenting a goal on a five point scale is a time consuming exercise. In stroke rehabilitation settings, patients are likely to have more than one goal. Therefore, this process has to be repeated multiple times potentially demanding much time and effort.

The Canadian Occupational Performance Measure (http://www.thecopm.ca/) is designed for use by occupational therapists to identify problems patients are experiencing in the domains of self-care, productivity and leisure (Carswell et al., 2004). Patients rate the **importance** (1=not important; 10=very important) of each identified problem area (e.g. difficulty getting dressed). The patient then rates their

current **performance** (1=not able to perform; 10=able to perform extremely well) and level of **satisfaction** with their performance (1=not satisfied; 10=extremely satisfied) for each problem priority area. Following the intervention period (e.g. dressing practice), the patient re-rates their levels of 'performance' and 'satisfaction'. The performance and satisfaction scores are summed and averaged over the number of problems to produce scores out of 10. A difference between the initial and subsequent score (change score) of two or more is considered clinically significant.

As well as promoting a patient centred approach to identifying rehabilitation goals, the COPM has been shown to be a valid, reliable and sensitive measure of change in patients' occupational performance over time (Cup et al., 2003; Carswell et al., 2004). Thus, the COPM can be used to both inform and evaluate occupational therapy interventions. A limitation of the COPM is that it was developed for use by occupational therapists using the Canadian Model of Occupational Performance as its conceptual basis (Sumison et al., 2011). Consequently, it may be less useful in settings (such as stroke rehabilitation) where goals and interventions are often considered in multi-disciplinary contexts.

In summary, while SMART goals, GAS and the COPM offer health professionals (and rehabilitation services) a way of measuring their impact by comparing pre and post-intervention goal related performance, all have specific limitations. Furthermore, none inform goal setting practice during the goal pursuit stage (Stevens et al., 2013) or address the important issue of disengaging from rehabilitation goals that are

proving too difficult to attain. Consequently, they cannot be used in isolation to inform a comprehensive approach goal setting practice.

2.5.3 Theoretical underpinnings of goal setting in rehabilitation

Wade (2005a) asserted that in rehabilitation:

> *"A theory or explanatory model is essential to analyse any situation, to decide on actions and to define the concepts and words used."* (Wade, 2005)

At the time of embarking on this thesis, the theoretical underpinning of goal setting practice in rehabilitation had not been well developed (Wade, 2001; Siegert & Taylor, 2004; Siegert et al., 2004). In 2004, two papers were published that investigated the theoretical underpinnings of goal setting in rehabilitation (Siegert & Taylor, 2004; Siegert et al., 2004). They concluded that goal setting was, "*a practical but largely a-theoretical*" intervention (Siegert & Taylor, 2004) and that an integrative model that included the concepts of goals, motivation and emotion was necessary to inform an "*effective and scientifically valid*" goal setting process (Siegert et al., 2004). Whilst these papers represented an important and novel contribution to the rehabilitation literature, the views presented were based on informal (rather than systematic) reviews of the literature. Consequently, no firm conclusions could be made about whether the theories suggested were the 'best' or only theories worthy of consideration.

In 2009, Playford et al. reported the results of a consensus group meeting which included rehabilitation professionals with goal setting expertise and representatives from two patient groups (the Stroke Association and Multiple Sclerosis Society). A modified Delphi method was used to explore the degree of consensus and controversy about key aspects of goal setting in rehabilitation. The group reported that:

> "*Current models and theories provide only incomplete explanations of how goals can be or should be applied to clinical rehabilitation or provide explanations that apply only to very specific areas of clinical practice*" (Playford et al., 2009)

They went on to propose two theories that could inform goal setting practice - Goal Setting Theory (Locke & Latham, 2002) (from organisational psychology) and self-regulation theory (no particular self-regulation theory named). The authors noted that there were other theories in addition to these that could be considered.

The aforementioned papers made an important contribution to the goal setting literature as they highlighted something that was probably obvious to most health professionals in practice, but underrated in terms of its importance i.e. that goal setting practice in rehabilitation was typically a-theoretical. An important point was also made about the interrelationship between goals, patient motivation and emotional status. Finally, the potential value of social and organisational theories from psychology (in particular self-regulation theories) to address the noted theory-practice

gap was emphasised. These developing insights informed my thinking and went some way to creating the impetus behind the review of the literature described in Paper 1 of this thesis (see Appendix 1).

2.5.4 Evidence base to support goal setting practice

At the time of embarking on this programme of research, a well conducted systematic review examining the effectiveness of goal planning (term used synonymously with goal setting) in rehabilitation was published (Levack et al., 2006a). The review included 19 randomised controlled trials evaluating a wide range of goal setting interventions in a variety of rehabilitation contexts, for example - physiotherapy for rheumatology patients, home based exercises for people with heart failure and an occupational therapy intervention in psychiatric setting. All interventions included an aspect of (or approach to) goal planning as one of the independent variables under investigation. The methodological quality of included papers was evaluated using the Physiotherapy Evidence Database (PEDro) scale.

Based on the findings of their review, the authors concluded that there was (i) some evidence to support the positive impact of goal planning on patient adherence to rehabilitation programmes (based on five studies with low PEDro scores) and (ii) strong evidence (in the context of acquired brain injury) that specific, challenging goals improve immediate patient performance in specific activities (based on 4 studies with high PEDro scores). It was not clear from the evidence if these effects resulted in improved rehabilitation outcomes. Methodological limitations of studies, the high

degree of variability between goal setting approaches used and outcomes selected for measurement did not allow for stronger conclusions to be made about the effectiveness of goal planning interventions.

Since then, two further systematic reviews examining goal setting interventions in stroke rehabilitation settings have been published (Rosewilliam et al., 2011; Sugavanam et al., 2013). The first, by Rosewilliam et al. (2011) focused on the evidence to support patient centred goal setting in stroke rehabilitation and included 18 qualitative studies, 8 quantitative studies and one using mixed methods. .The second by Sugavanam et al. (2013) focused on the effects and experiences of goal setting in stroke rehabilitation and included six qualitative and 11 quantitative studies. Although there was overlap between the scope of these reviews, they had only five studies in common. Sugavanam et al (2013) included only stroke specific qualitative and quantitative studies of goal setting interventions, or quantitative studies of mixed patient groups where the stroke specific data could be extracted. In contrast to this, Rosewilliam et al. (2011) included quantitative and qualitative studies of client centred goal setting involving, but not restricted to, stroke patients.

The evidence presented in these reviews provided some support for the use of goal setting interventions in stroke rehabilitation. Synthesis of the qualitative findings suggested that stroke survivors wanted to be involved in the goal setting process. They viewed their active participation as important and believed that working towards personal goals would result in better outcomes for them (Rosewilliam et al., 2011).

Improved patient ratings of performance and satisfaction were also noted in four included studies using the Canadian Occupational Performance Measure (COPM – see Section 2.5.2 pg. 21) implying progress towards goal achievement and recovery. However, the methodological quality of these studies was rated as weak to moderate (Sugavanam et al., 2013). There was also evidence that patient centred goal setting could have a positive effect on psychological outcomes such as improved self-efficacy and motivation and reduced anxiety (Rosewilliam et al., 2011). Finally, patients' perceptions of self-care ability improved if they were supported to identify goals and consider strategies to achieve them, compared to those who did not have this support. Whether these perceptions resulted in meaningful changes in behaviour was unclear (Sugavanam et al., 2013).

Sugavanam et al. (2013) highlighted that no explicit framework or process (theoretical or not) had been identified to inform the goal setting practice and speculated that that this may explain the diversity of goal setting methods used and lack of consensus in practice.

A clear finding of both reviews was that patient and health professional experiences of the goal setting process differed and this could lead to conflict. Patients reported negative perceptions of their participation in the process, for example feeling they did not have control over their goals or were passive during the process (Rosewilliam et al., 2011). Patients were also unclear about the meaning of goal setting and their role

in the process (Sugavanam et al., 2013). In contrast to this, health professionals viewed their practice as client centred (Rosewilliam et al., 2011) and rated patient participation in the process as high (Sugavanam et al., 2013). Patients tended to formulate general hopes rather than goals that were highly personal to their own lives. Health professionals tried to set specific goals that were relevant to their own discipline (Sugavanam et al., 2013).

The evidence also suggested that patients and health professionals approached recovery from different perspectives. For example, patients assessed their recovery by comparing their current status to their pre-stroke status. Health professionals assessed recovery by comparing their current status to their immediate post-stroke status (Sugavanam et al., 2013). Finally, numerous barriers to using goal setting in practice were identified which included patients having unrealistic expectations, or cognitive and/or communication difficulties limiting patient participation in the process (Rosewilliam et al., 2011; Sugavanam et al., 2013).

Three important conclusions were made on the basis of these reviews (i) there was insufficient evidence to either support or refute the effectiveness of goal setting (whether patient centred or otherwise) in stroke rehabilitation and that further high quality studies are needed (Rosewilliam et al., 2011; Sugavanam et al., 2013), (ii) current goal setting practice was typically not patient centred (Rosewilliam et al., 2011) and (iii) recommendations to follow patient centred goal setting in stroke

rehabilitation remain, *"anecdotal, ideological and politically expedient*" (Rosewilliam et al., 2011 pg. 511).

2.5.5 Goal setting: The theory- evidence-practice gap

In light of the noted theory-evidence-practice gaps, it is perhaps not surprising that goal setting practice (and the terminology used to describe it) is highly variable, with little or no consensus about how it should be optimally delivered in practice. The central argument underpinning this thesis is that goal setting has become accepted as 'best practice' in stroke rehabilitation, on the basis of clinical guidelines and policy initiatives, without a strong theoretical rationale or evidence base to support it. This creates a problem for health professionals who are challenged with the job of implementing goal setting in practice. In the absence of a sound theory or evidence base to guide them, practice is based (to a greater or lesser extent) on clinical judgement and tacit knowledge. It also creates a problem for stroke survivors (and their carers) who are likely to be receiving variable, and in some cases sub-optimal (or even counterproductive) goal setting interventions. This may compromise their ability to achieve important personal goals and optimise their quality of life in the aftermath of stroke.

Development of a theoretically informed goal-setting practice framework in which the key components and mechanisms of action are clearly defined and evaluated would address this problem by (i) guiding goal-setting practice in a systematic way, providing health professionals with a shared understanding of *what* to do and *why* they are

doing it in a particular way, (ii) promoting use of uniform terminology and concepts that are understood by the health professionals, patients and carers, and (iii) clarifying how patients (and carers) can be involved in the process. Such a development would aim to optimise goal setting practice and give patients the best opportunity to meet their personal goals and optimise recovery. Additionally, it would facilitate the systematic evaluation of a replicable goal setting intervention, thus enabling the development of a cumulative evidence base to inform clinical practice.

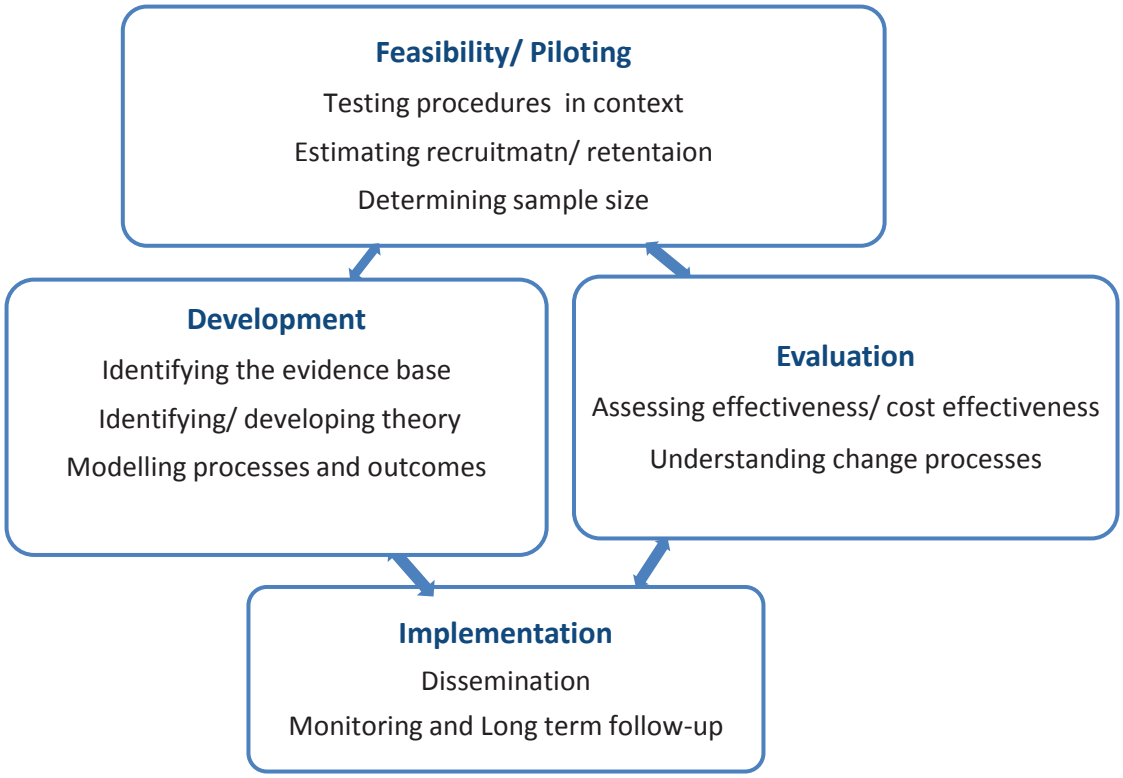
2.6 A way forward: Understanding goal setting as a complex intervention

Complex interventions are widely used in the health service and typically contain several interacting components (Craig et al., 2008). The Medical Research Council (MRC) provided guidance for the development and evaluation of complex interventions in 2000 (Medical Research Council, 2000; Campbell et al., 2000) which was updated and extended in 2008 (Craig et al., 2008; Medical Research Council, 2008).

Complexity of interventions can be considered in terms of a number of factors: the number of components in the intervention and interactions between them; the level of behaviour change required by those delivering and/or receiving the intervention; the organisation levels targeted by the intervention, the number and variability of outcomes targeted by the intervention and the degree of flexibility or tailoring of the intervention permitted (Craig et al., 2008). The MRC new guidance (Craig et al., 2008; Medical Research Council, 2008) outlines the stages involved in development and

evaluation of complex interventions and key functions within them (see Figure 3). It is designed to inform an iterative, rather than linear, process to develop and evaluate complex interventions.

Figure 3. MRC guidance: key elements of the development and evaluation process



Goal setting should be considered as a complex intervention as it (i) involves a number of components (e.g. *identifying patients' priorities, setting a goal, reviewing progress, assessing outcomes*); (ii) requires behaviour change at multiple levels (e.g. *the level of the health professional, patient (and possibly carer) and team*), (iii) may impact on a variety of outcomes (e.g. *team processes; health professional practice, patient outcomes*) and (iv) is likely to require a high degree of tailoring to different health care settings and the individual patients being seen within them. The MRC guidance was

therefore chosen to structure and inform the programme of research to develop and evaluate a goal setting practice framework for use in community rehabilitation settings.

2.7 Aims of thesis:

- To use the MRC guidance to inform systematic development of an evidence and theory based practice framework to guide goal setting practice in community based stroke rehabilitation settings.
- To evaluate the acceptability of the developed framework from the perspective of patients and health professionals, and feasibility of its use in routine practice.
- To understand the nature of current goal setting practice and the community rehabilitation contexts in which it is delivered.

Introduction to submitted publications

In this PhD thesis I present four published papers describing a series of linked empirical studies which aimed to develop and (initially) evaluate a **G**oal setting and **A**ction **P**lanning (G-AP) framework for use in community based stroke rehabilitation settings (see Table 1).

Table 1: Summary of papers included in PhD thesis

Paper	Reference
1	**Scobbie, L.** Wyke, S., Dixon, D. *Identifying and applying psychological theory to setting and achieving rehabilitation goals*. Clinical Rehabilitation 2009; 23:231-333. DOI: 10.1177/0269215509102981.
2	**Scobbie, L.,** Wyke, S., Dixon, D. *Goal setting and action planning in clinical rehabilitation: Development of a theoretically informed practice framework.* Clinical Rehabilitation 2011; 25(5) 468–482. DOI: 10.1177/0269215510389198
3	**Scobbie, L.,** Wyke, S., Dixon, D. McLean, D., Duncan, E**.** *Implementing a framework for goal setting in community based stroke rehabilitation: a process evaluation.* BMC Health Services Research 2013, 13:190 http://www.biomedcentral.com/1472-6963/13/190. DOI: 10.1186/1472-6963-13-190
4	**Scobbie, L**., Duncan, E. A., Brady, M. C., Wyke, S. *A UK wide survey of goal setting practice in community based stroke rehabilitation*. Disability and Rehabilitation 2014, Early Online: 1–8. http://informahealthcare.com/doi/pdfplus/10.3109/09638288.2014.961652 DOI: 10.3109/09638288.2014.961652

A book chapter (see Appendix 5) and a final report to the Chief Scientists Office (CSO Doctoral training Fellowship DTF/11/02) (See Appendix 6) have been included as

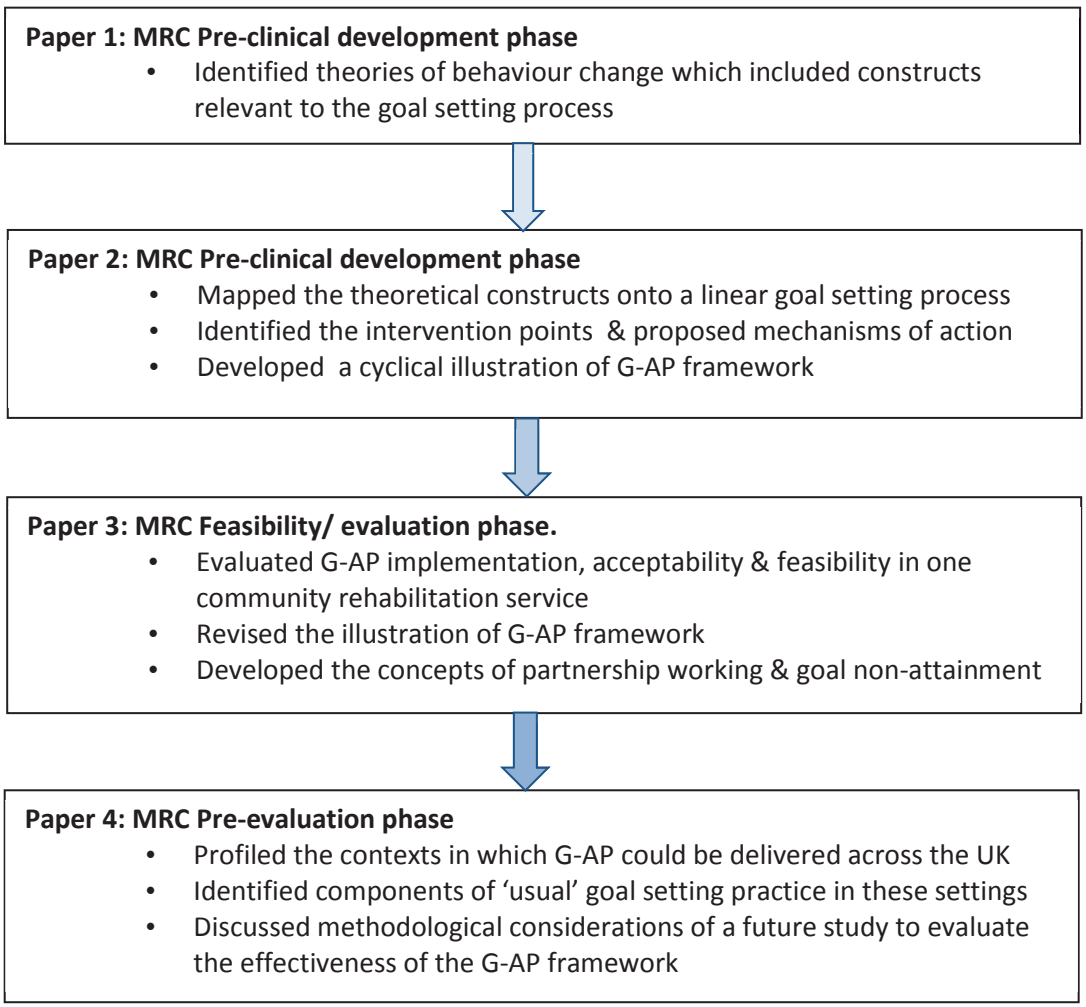
appendices. The book chapter presents a rationale for the theoretical approach to development of the G-AP framework and provides an overview of papers 1, 2 and 3 in a format that is highly accessible to health professionals in clinical practice. The CSO final report summarises the completed survey reported in Paper 4 (see Appendix 4) and the preliminary findings of a study conducted in 2013/14 that evaluated the implementation of the G-AP framework in three different community rehabilitation services in Scotland. Further analysis of this data is currently in progress.

The individual studies were conducted on a part time basis over a seven year period (2006-13). Those reported in Papers 1, 2 and 3 were conducted whilst I was a clinical research fellow with the Alliance for Self-Care Research at the University of Stirling. The Alliance was funded by Scottish Funding Council, NHS Education for Scotland and Scottish Government. The study reported in Paper 4 was conducted as part of my Chief Scientist Office doctoral training fellowship which was hosted within the Nursing Midwifery and Allied Health Professional Research Unit at the University of Stirling.

3.1 Interrelationship of submitted publications

Each study contributed to an overall programme of work which aimed to develop and conduct an initial evaluation of the G-AP framework in community based stroke rehabilitation settings. Figure 4 summarises the interrelation ship between each paper and indicates which phase of the MRC guidance each study mapped onto.

Figure 4. Interrelationship between submitted publications



In the following sections, each publication will be discussed under the following headings (i) a summary of the publication, (ii) ethical issues, (iii) a statement about my contribution to the publication, (iv) a critical reflection of the research methods used (which go beyond those covered in each paper), (v) a comment on the journal standing and journal choice and (vi) a critical review of the contribution of the submitted work to the field.

Paper 1 – see appendix 1

Clinical Rehabilitation 2009; 23: 321–333

Identifying and applying psychological theory to setting and achieving rehabilitation goals

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Received 22nd December 2008; returned for revisions 27th December 2008; revised manuscript accepted 7th January 2009.

Background: Goal setting is considered to be a fundamental part of rehabilitation; however, theories of behaviour change relevant to goal-setting practice have not been comprehensively reviewed.

Objectives: (i) To identify and discuss specific theories of behaviour change relevant to goal-setting practice in the rehabilitation setting. (ii) To identify 'candidate' theories that that offer most potential to inform clinical practice.

Methods: The rehabilitation and self-management literature was systematically searched to identify review papers or empirical studies that proposed a specific theory of behaviour change relevant to setting and/or achieving goals in a clinical context. Data from included papers were extracted under the headings of: key constructs, clinical application and empirical support.

Results: Twenty-four papers were included in the review which proposed a total of five theories: (i) social cognitive theory, (ii) goal setting theory, (iii) health action process approach, (iv) proactive coping theory, and (v) the self-regulatory model of illness behaviour. The first three of these theories demonstrated most potential to inform clinical practice, on the basis of their capacity to inform interventions that resulted in improved patient outcomes.

Conclusions: Social cognitive theory, goal setting theory and the health action process approach are theories of behaviour change that can inform clinicians in the process of setting and achieving goals in the rehabilitation setting. Overlapping constructs within these theories have been identified, and can be applied in clinical practice through the development and evaluation of a goal-setting practice framework.

4.1 Summary of the publication

This study was set within the development phase of the MRC guidance (Craig et al., 2008) (See Figure 4; pg. 35). It was a necessary first step in the series of studies as (i) no other studies were identified that had the explicit aim of systematically identifying theories relevant to the goal setting process in rehabilitation and (ii) developing a framework with a strong theoretical underpinning would assist with identification of its component parts, causal mechanisms and predict what outcomes it was likely to impact on. This paper describes a review of the rehabilitation and self-management literature which aimed to identify theories of behaviour change that offered most potential to inform the goal setting process in the rehabilitation setting.

4.2 Ethical issues

Neither NHS ethical approval nor School Research Ethics Committee approval from the University of Stirling was required for this study as data were collected through review of existing published studies. Nonetheless, the research undertaken was subject to research governance standards. As the principal investigator, I had a responsibility to conduct and manage the study ethically - that is, to ensure that it was conducted transparently, with academic rigour and to ensure the results were of the highest quality (Medical Research Council, 2012).

4.3 My contribution to the publication

I led the design of the review, screening of papers, data extraction, data analysis and writing the manuscript. Sally Wyke and Diane Dixon supervised the design of the review. They also assisted with the screening of papers, data extraction, data analysis and contributed to the draft manuscript.

4.4 Critical reflection of research methodologies and methods used

The methods used to undertake reviews of the literature are rapidly evolving (Gough et al., 2012). Different methods have been described and commonalities and differences between them noted (Dixon-Woods et al., 2005; Grant & Booth, 2009; Gough et al., 2012). Although typologies of review methods have been proposed (Grant & Booth, 2009) it has been suggested that these are of limited value due to the evolving and overlapping nature of review types, and the lack of consensus in terminology used to describe them (Gough et al., 2012).

However, a useful distinction has been made between reviews that primarily aim to conduct an *integrative synthesis* versus an *interpretive synthesis* of the literature (Dixon-Woods et al., 2005). An *integrative synthesis* focuses on summarising data within well specified concepts or domains. The summary is achieved through pooling of the data, for example through meta-analysis or by creating a descriptive account of the data. Integrative syntheses are most often concerned with theories of causality with their main output being, "*aggregates of data*" (Dixon-Woods et al., 2005) (pg.

46). Assessing the methodological quality of the studies included in integrative synthesis is important to assess the risk of bias and ensure the validity of the results.

In comparison, *interpretive syntheses* are primarily concerned with the development of concepts and theories (Dixon-Woods et al., 2005). They aim to develop our understanding of the topic under investigation and so are suited to research questions of a different nature. Quality analysis of included papers is less relevant to the review outcome. The main output of an interpretative synthesis is, "*not aggregations of data, but theory*" (Dixon-Woods et al., 2005) (pg. 46).

Creating a sensible 'fit' between the research question(s) and the review methods used is a key issue to be addressed before any review is undertaken (Dixon-Woods et al., 2005; Kastner et al., 2012). The primary objective of the review described in Paper 1 was to systematically identify, describe and integrate theories of behaviour change that demonstrated most potential to inform development of a goal setting practice framework. We therefore conducted an interpretive (rather than integrative) synthesis of data. Identifying candidate theories was based on the *relevance* of the theory used to the goal setting process, its *clinical application* and *impact* on behaviour change or clinical outcomes. These attributes were judged to be most important to developing the practice framework. The review methods chosen were aligned to achieving this overall aim (see Box 2 for summary of methods used).

Box 2. Methods used in review described in Paper 1 (Scobbie et al. 2009)

1. Search strategy developed to identify theories of behaviour change used to inform goal setting interventions in a self-management or rehabilitation context
2. Papers selected according to inclusion/ exclusion criteria
3. Data extracted under the following headings: key constructs, clinical application and empirical support (i.e. did the intervention achieve its intended outcome)
4. Identified theories described and critiqued *(Health Action Process Approach, Social Cognition Theory; Goal Setting Theory; Proactive Coping Theory; Self-regulation Model of Illness Behaviour)*
5. Candidate theories proposed on the basis of their key constructs, clinical application and empirical support *(Health Action Process Approach, Social Cognition Theory; Goal Setting Theory)*
6. Overlapping theoretical constructs identified within candidate theories *(self-efficacy; outcome expectancies, goal attributes, planning, goal appraisal and feedback)*

Having conducted the review, it is useful to reflect on (i) why a review of this nature was a good place to start (ii) whether the review captured all of the important theories and (iii) if all relevant constructs across candidate theories were included. These issues are discussed in the following sections.

4.4.1 Why was a review of this nature a good place to start?

At the time of designing this review, a systematic review examining the effectiveness of goal setting interventions in rehabilitation settings had just been published (Levack et al., 2006a) (see Section 2.5.4; pg. 25). This review concluded that it was not clear from the evidence if goal setting resulted in improved rehabilitation outcomes. Methodological limitations of studies and the high degree of variability between goal setting approaches used and outcomes selected for measurement did not allow for stronger conclusions to be made. I was also aware of the literature emphasising the need to develop a theory based approach to goal setting practice (see Section 2.5.3; pg. 23).

This prompted me to consider a different approach to developing the practice framework that started with identifying theories relevant to goal setting practice and building from there. This approach was in keeping with (i) the MRC guidance (Craig et al., 2008) which underlined the central importance of theory to inform the development and evaluation of complex interventions and (ii) the developing evidence base supporting the view that theory based interventions were more likely to be effective than those that were not (Albarracín et al., 2005; Downing et al., 2006; Scobbie & Dixon, 2014; pg. 210).

4.4.2 Why only consider theories of behaviour change?

A critical decision to be made when conducting any review is deciding on the scope of the literature to be considered i.e. the inclusion and exclusion criteria. In this review, an initial search of the literature was conducted using wider inclusion criteria. Papers that proposed *any* model or theory relevant to the process of setting and/or achieving goals in a self-management or rehabilitation context were included. This search retrieved papers that described a range of disparate theories and models which were relevant to goal setting practice. For example, *Orem's self-care model* from the nursing literature which describes a process of writing SMART (specific, measurable, achievable, realistic and truthful i.e. having clear significance for the patient) nursing self-care objectives (Dumas, 1992); the *Chronic Care Model* which incorporates goal setting for supporting self-management (Glasgow et al., 2003) and the *Hierarchical Systems Model*, a bespoke model designed to identify goals for with people with low vision (Massof, 1995). It became clear that these models and/ or theories could not be compared or linked in a meaningful way to inform the goal setting process as they were conceptually different, designed for different purposes and aimed to achieve different outcomes.

To address this problem, a decision was made to conceptualise the 'work' or 'goals' of rehabilitation as behaviour. For example, stroke survivors may have to learn how to perform exercises to improve upper limb strength (*behaviour to address an impairment*); or to read information booklets about managing blood pressure to understand how they can minimise the risk of a further stroke (*behaviour to address*

secondary prevention of stroke); or to practise use of breathing techniques during daily activities (*behaviour to manage anxiety*), or to walk to the local library using a stick (*behaviour to address participation limitation*). Subsequently, the scope of the review was narrowed to theories of behaviour change. This decision was congruent with expert opinion at the time. In 2001, Wade argued that:

> *"… almost all interventions undertaken in rehabilitation involve altering behaviour, be that the behaviour of a patient, a family member or carers."* (Wade, 2001)

He went on to say that understanding how patients (and important people around them) can be assisted in changing their behaviour was a top research priority.

By focusing on theories of behaviour change, the review identified theories that (i) were relevant to optimising patients' goal related behaviour change (ii) were composed of constructs that were conceptually similar and (iii) were able to generate hypotheses that could be empirically tested. These are important attributes in the development of scientific theory in general (Dekker, 2008) and to the development of an integrated theoretical framework to underpin the goal setting practice in particular.

However, behaviour change theories have been criticised for not addressing important contextual issues, such as social and environmental factors, that influence patients' goal choices and likelihood of goal attainment. Additionally, not all of rehabilitation is about what patients do; it is also about what carers do, what health professionals do

or what society does. For example, achieving the goal of walking to the local shop for a newspaper may include getting hand rails installed at the front door (*intervention at the environmental level – something that the health professional activates and the local council provides*) in addition to the patient practising getting up and down steps (*intervention at the behavioural level – something that the patient does*). This goal may be easier to attain if the patient has a family member to provide encouragement and opportunities for practice versus someone who lives on their own (*social support as a facilitator – something that the family member does*).

This limitation was acknowledged and addressed in our next study reported in Paper 2 (See Appendix 2) by integrating use of the G-AP framework with the International Classification of Functioning Disability and Health (World Health Organization, 2001). This created an explicit link between patient's goals, health, functioning and contextual factors (including physical, social and personal factors).

4.4.3 Were important theories excluded?

When designing a search strategy, a balance has to be struck between sensitivity (i.e. retrieving all papers relevant to the research question) and specificity (i.e. avoiding retrieval of many non-related papers) (Higgins & Green, 2011). This is often a difficult balance to strike and demands an iterative approach to search strategy development. The search strategy used in this review retrieved 519 papers. This was both a substantial and manageable body of literature to answer the research question.

Developing inclusion and exclusion criteria is another important consideration when designing a review (Higgins & Green, 2011). In this study, only review papers or empirical studies, that described a theory based goal setting intervention (or an intervention in which goal setting was a key component), in either a rehabilitation or self-management context, were included. Twenty four of the 519 retrieved papers met these inclusion criteria which resulted in five theories of behaviour change being identified as candidates for consideration.

One retrieved paper that did not meet the inclusion criteria was a discussion paper about Hope Theory and its relevance to rehabilitation (Snyder et al., 2006). Hope theory was developed in the field of Positive Psychology and contained important ideas relevant to the goal setting process in rehabilitation. For example (i) there are different routes or pathways to desired goals – if one pathway is not effective then alternative pathways can be attempted (ii) hope can create an emotional buffer against the inevitable problems encountered during goal pursuit and (iii) desired goals are likely to differ in terms of their likelihood of being met – people with high hope will alter the situation to make seemingly impossible goals more attainable.

Maintaining hope is an important part of the rehabilitation process (Snyder et al., 2006) and the process of recovery for stroke survivors (Hafsteinsdottir & Grypdonck, 1997). However, the findings of the study reported in Paper 3 (see Appendix 3, pg. 6) suggested that health professionals found it difficult to manage the tension between maintaining hope and being realistic in the appraisal and feedback stage (Scobbie et

al., 2013). Other studies have reported similar findings (Lawler et al., 1999; Wiles et al., 2004; Lloyd et al., 2014; Mudge et al., 2014). Hope theory could offer insights into the value of maintaining hope and might inform health professionals' clinical reasoning as they balance hope versus realism as goals are negotiated and set. However, it has been argued that theories that have no empirical support should not be used to inform behaviour change interventions (Michie & Abraham, 2004). Subsequently, this discussion paper was not included.

Whist this review may not have captured *every* theory that could potentially inform the goal setting process (Hope theory being one of them); it did create a solid foundation on which to build using transparent methods. The developing insights gathered in subsequent studies (including those described in Paper 3; see Appendix 3) were considered and used to develop the theoretically underpinning of the practice framework over time.

4.4.4 Were all relevant constructs within selected theories included?

There are many theories of behaviour change described in the literature which include overlapping constructs (Armitage & Conner, 2000) and integration of constructs across theories may be a sensible way forward (Hagger, 2009; L. Scobbie & Dixon, 2014, pg. 217). Following identification of the theories judged to have most potential to inform the goal setting process (Goal Setting Theory; Health Action Process Approach and Social Cognition Theory) a decision had to be made about which

constructs within these theories should inform the next stage of development of the practice framework.

The constructs chosen (i.e. self-efficacy; goal specificity & difficulty; action planning & coping planning and appraisal and feedback) were those that (i) demonstrated clear clinical application within the described studies and/or (ii) were common across identified theories. Some constructs did not meet these criteria and therefore were not included e.g. *goal commitment* and *goal importance* from Goal Setting Theory and *perceived threat* from Heath Action Process Approach. Inclusion of all constructs within identified theories without a supporting rationale could have been counterproductive as (i) potentially redundant constructs may have been introduced, and (ii) the process of applying theory to the practice framework would not have been targeted on the basis of evidence. In short, there was more to be gained than lost by restricting inclusion of theoretical constructs to those that had been usefully applied in practice.

4.5 Critical review of the contribution of the submitted work to the field

The need to develop a theoretical basis for goal setting practice in rehabilitation has been reiterated over the last 15 years (Wade, 2001; Siegert & Taylor 2004; Siegert et al., 2004; Playford et al., 2009). This study was the first to take a structured approach to reviewing the literature to identify candidate theories of behaviour change that could be used to inform the development of the goal setting practice framework for use in the rehabilitation setting.

The findings of this review provided a strong theoretical rationale for considering the process of setting and working towards rehabilitation goals in two distinct phases – a motivational phase (*development of the goal intention*) and an action phase (*initiation and maintenance of goal directed behaviour)* – with specific theoretical constructs relevant to each phase. This generated clear practice implications, the main one being that setting a rehabilitation goal is only *one* part of the overall process. Working towards achieving that goal requires further targeted input - action planning augmented by a coping plan if necessary. These represented new and important aspects of the goal setting process that, whilst possibly established within other disciplines (for example health psychology), were not implemented routinely within the rehabilitation setting.

The findings of this review underlined the importance of self-efficacy and outcome expectancies as important motivational factors to be considered during the goal setting process. It has been noted that the concept of motivation is not well understood within the rehabilitation literature (Maclean et al., 2000). In practice, patients who appear to have low motivation can be labelled as having poor rehabilitation potential, which in turn, can impact on the rehabilitation they receive (Maclean & Pound, 2000; Maclean et al., 2002; Burton et al., 2014).

Understanding the influence of self-efficacy and outcome expectancies on motivation can give health professionals a better understanding of why some people appear to be

motivated to set and pursue rehabilitation goals, and others are not. It can also inform what could, or should, be done to enhance motivation. For example, a stroke survivor may lack motivation to participate in rehabilitation because they believe that physical exertion might cause another stroke (*negative outcome expectancy*) or because they lack confidence in their ability to perform a particular task, such as stair climbing (*low self-efficacy*). Targeted input to challenge these negative beliefs, such as providing education about the importance of early mobilisation after stroke or using efficacy enhancing techniques when discussing stair practice, can challenge these negative beliefs and in turn improve motivation.

A novel aspect of the approach used in this review was to look beyond the rehabilitation literature and include papers from the field of self-management. This decision reflected the continuing integration of supporting self-management into rehabilitation practice (Department of Health, 2009; Scottish Executive, 2007) and recognised that goal setting was a key component of evidence and theory based self-management interventions, such as the Stanford Chronic Disease Self-Management Program (Lorig et al., 2006). Inclusion of self-management literature strengthened the review as it increased the number of studies included and underlined the importance of self-efficacy and outcome expectancies as important constructs (from Social Cognitive Theory) to inform the goal setting process.

4.6 Journal standing, journal choice and reception of submitted publications

Clinical Rehabilitation is an internationally respected peer-reviewed journal that focuses on disability and rehabilitation research (http://cre.sagepub.com/). It publishes research and discussion articles and its readership includes health professionals and academics interested in goal setting in rehabilitation contexts. Clinical Rehabilitation has an impact factor of 2.18 (December 2014).

To date, Paper 1 has been cited in 50 papers (Google Scholar 21.2.15) and used to inform goal setting interventions in different contexts. For example, it has been used to inform an accelerometer based feedback intervention to improve daily walking activity with stroke survivors (Mansfield et al., 2013) and development and evaluation of goal setting and action planning framework for use in the palliative care setting (Boa, 2013). The findings reported in Paper 1 have also been used to inform thinking about other psychological theory relevant to stroke rehabilitation (Donnellan & O'Neill, 2014) and goal setting practice in the context of brain injury rehabilitation (Evans, 2012).

In the field of occupational therapy, Paper 1 was cited as justification for exploring whether measurement of confidence in goal pursuit could complement existing tools, such as the Canadian Occupational Performance Measure (Poulsen et al., 2014). Crucially, this paper provided the theoretical foundation for the next stage of development of the goal setting practice framework. Without it, the subsequent papers included in this PhD thesis would not have been possible.

Paper 2 – see appendix 2

Clinical Rehabilitation 2011; 25(5) 468–482.

Goal setting and action planning in the rehabilitation setting: development of a theoretically informed practice framework

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Background: Setting and achieving goals is fundamental to rehabilitation practice but has been criticised for being a-theoretical and the key components of replicable goal-setting interventions are not well established.

Purpose: To describe the development of a theory-based goal setting practice framework for use in rehabilitation settings and to detail its component parts.

Methods: Causal modelling was used to map theories of behaviour change onto the process of setting and achieving rehabilitation goals, and to suggest the mechanisms through which patient outcomes are likely to be affected. A multidisciplinary task group developed the causal model into a practice framework for use in rehabilitation settings through iterative discussion and implementation with six patients.

Results: Four components of a goal-setting and action-planning practice framework were identified: (i) goal negotiation, (ii) goal identification, (iii) planning, and (iv) appraisal and feedback. The variables hypothesized to effect change in patient outcomes were self-efficacy and action plan attainment.

Conclusions: A theory-based goal setting practice framework for use in rehabilitation settings is described. The framework requires further development and systematic evaluation in a range of rehabilitation settings.

5.1 Summary of the publication

This study is set within the pre-clinical development phase of the MRC guidance (Craig et al., 2008) (See Figure 4; pg. 35). Having identified theoretical constructs relevant to goal setting practice, the next stage was to map these constructs onto the goal setting process to understand its key stages and causal mechanisms (i.e. how will it work) (Craig et al., 2008). This paper describes how this mapping exercise was conducted using the causal modelling approach described by Hardeman et al. (2005). It then describes how the causal model was developed into a practice framework by a multi-disciplinary Task Group of health professionals who used the model to inform their goal setting practice with a group of six patients actively engaged in stroke rehabilitation.

5.2 Ethical Issues

Ethical approval was not required for this study as goal setting was routinely used within the NHS service that members of the Task Group worked in. As such, this study did not constitute a new addition to clinical practice; but involved using an established intervention in a different way. The study adhered to research governance standards (Medical Research Council, 2012).

5.3 My contribution to the publication

I was responsible for the development of the study concept and design, led the causal modelling exercise and Task Group phase of the project and wrote the manuscript.

Sally Wyke and Diane Dixon assisted in development of the study concept and design, the causal modelling exercise and drafting of the manuscript.

5.4 Critical reflection of research methodologies and methods used

Modelling complex interventions informs their development and evaluation (Craig et al., 2008) (See Figure 4; pg. 35) and enhances the likelihood of the developed intervention being effective (Michie & Abraham, 2004). Using a causal modelling approach to develop a theoretical understanding of the goal setting process was a logical progression from the review reported in Paper 1, and an important step in the overall development of the G-AP framework. A critical reflection of methods used in this study led me to consider to salient questions:

- Was the developed causal model comprehensive?
- Did the work of the clinical Task Group substantiate the developed practice framework?

5.4.1 Was the developed causal model comprehensive?

Different approaches to modelling complex interventions have been described (Craig et al., 2008). Using the causal modelling approach described by Hardeman et al. (2005) created an explicit, systematic and transparent method to map the theoretical constructs identified in Paper 1 onto a goal setting process. It enabled the identification of *key stages* and *intervention points*, and allowed theoretical predictions to be made about *causal mechanisms* and *outcomes*. These are important outcomes to be achieved in the pre-clinical development stage of complex

interventions to ensure the intervention is both replicable and open to empirical testing (Craig et al., 2008).

After attending a course in 2012 entitled, "*Developing Complex Public Health Interventions*" hosted within the centre for the Development and Evaluation of Complex Interventions for Public Health Improvement in Cardiff (http://decipher.uk.net/), I was challenged to think about potential limitations of the causal model. On this course I was introduced to logic models. The W. K. Kellogg Foundation (2004) (pg. iii) states:

> "*A program logic model links outcomes (both short- and long-term) with programme activities/ processes and the theoretical assumptions/ principals of the programme*." (Kellogg Foundation, 2004).

Logic models are often displayed as a one page illustration that shows the links between the resources required to implement the intervention, and the intervention components, processes and outcomes. Examples of logic models to underpin stroke prevention programmes and national exercise referral schemes have been published (Sitaker et al., 2008; Moore et al., 2013). I learned that logic models went beyond causal models, offering a comprehensive overview of the programme, with inclusion of the full range of its activities (or components) and their linkage (through various processes) to a range of outcomes at different levels. It could also include details of the resources required to implement the intervention in real life settings. It also

became clear to me that logic models were dynamic – they could, and should, be developed over time as new knowledge and insights were gathered (Sitaker et al., 2008).

These developing insights led me to question whether the casual modelling exercise described in Paper 2 had too much focus on behavioural constructs without due consideration to other factors that may influence the goal setting process in practice. The work of the Task Group highlighted (i) the importance of an organised multidisciplinary team *(resource)* (ii) the value of providing a 'patient held record' for patient use *(potential intervention component)*, (iii) health professional training needs *(resource)*, and (iv) outcomes beyond that of the patient, for example enhanced patient centred practice *(outcomes*). These resources, intervention components and outcomes were not considered, or included, within the developed causal model.

After careful deliberation, I concluded that the causal modelling exercise was a good place to start. As previously noted, it highlighted *key stages* and *intervention points* within the process, and allowed theoretical predictions to be made about *causal mechanisms* and *outcomes*. At the time of writing Paper 2, I did not have the empirical evidence to develop the causal model further. For example, it was not clear whether the patient held record was a necessary component of the intervention (would other services and stroke survivors use it or see a need for it?) or how it might influence patient outcomes (did it facilitate an efficient team approach or was it more about helping patients gauge their own progress?). The findings of the process evaluation

described in Paper 3 provided further insights about use of the patient held record. For example, patient reports suggested that the record guided and prompted practice of rehabilitation activities at home (Scobbie et al., 2013). With this knowledge, it is plausible to suggest that use of the G-AP record should impact on goal attainment through increased adherence to, and practice of, rehabilitation activities. This and other findings reported in Paper 3 informed further development of the causal model, and placed it within a broader logic model (see Figure 5, pg. 90). The logic model provides a one page overview of the G-AP process and related activities, the resources required to implement it and the outcomes it is predicted to impact on.

5.4.2 Did the work of the Task Group substantiate the developed practice framework?

The study described in Paper 2 was conducted whilst I was a practising occupational therapist within the community rehabilitation team in NHS Forth Valley (ReACH Team) and a clinical research fellow within the Alliance of Self Care Research (University of Stirling). This unique position allowed me to straddle the 'theoretical' and 'practice' development of the framework. This had many advantages. For example, I could clearly explain the developed causal model and the terminology used with it to Task Group members, using clinical examples they could relate to. Without this support, the causal model may have been inaccessible to some members of the Task Group and its development into a practice framework hindered. The Task Group also created an opportunity to 'explore' how aspects of the causal model would unfold in practice. This fostered a reflective and participatory approach to development of the framework which was well suited to this early stage of development.

However, there were aspects of the Task Group exercise that were potentially problematic. Being a senior therapist within the team and having a sound knowledge of the theoretical development of the causal model may have given me the 'loudest voice' within the Task Group. This could have resulted in me assuming a dominant role within the group and steering development of the practice framework in a way that fitted with my views and ideas.

To guard against this, the Task Group members reviewed and verified notes taken by me after each meeting. This fostered a sense of shared responsibility within the group. Additionally, I was clear about my position within the group. I understood that development of the framework required the input of practising health professionals and rehabilitation assistants rather that on-going desk-based academic theorising. It was their input that would move development of the practice framework forward. Finally, the Task Group members (not including myself) represented an experienced group of health professionals. Five of the seven members had in excess of 15 years clinical experience each. One member had a PhD and was an active researcher, another was a PhD student who was conducting research about goal setting in the palliative care setting and another was a doctoral psychology student. The experience and calibre of the Task Group members helped to minimise the risk of me assuming a dominant role within the group and fostered a clinical-academic approach to development of the practice framework.

The causal model was used to inform practice with six patients. Arguably, it would have been better to include more patients in this exercise. The case study approach used provided an in-depth evaluation of how use of the causal model informed goal setting practice over an extended period of rehabilitation input with a varied but constant group of patients, rather than how it informed goal setting practice over one or two sessions with many different patients. This had important implications. Task group reviewing the causal model informed process over time, with the same patients, highlighted the need to move away from a linear theoretical process, to a cyclical process that included different decision making options. This was an important conceptual shift that would have important implications for practice.

Whilst acknowledging the potential limitations described above, I am confident the work of the Task Group was enough to substantiate the practice framework at that particular stage of development. The main aim of the Task Group was to apply the theoretical constructs identified in the previous study (Paper 1) to a goal setting process that could be used in practice. This aim was achieved. Optimising the framework and assessing its acceptability and feasibility in practice required a different methodological approach and a separate study which is described in Paper 3.

5.5 Critical review of original contribution of the submitted work to the field

This study created an explicit link between theories of behaviour change and goal setting practice. In doing so, it represented a new and innovative contribution to the rehabilitation literature. A key strength of the methods used in this study was the

combined theoretical and clinical approach. This added to the methodological rigour and clinical relevance of the developed practice framework. This level of 'ground work' is the exception, rather than the rule, in the development of complex interventions for use in stroke rehabilitation (DeJong et al., 2005; Redfern et al., 2006). Many rehabilitation interventions are not fully described or understood in terms of their component parts or causal mechanisms. It is difficult therefore to replicate them in different clinical or research settings or test (or even be clear about) what their mechanisms of action are. This study, combined with the studies described in Papers 1 and 3, challenged this trend in a positive direction acting as an exemplar for the development, evaluation and reporting of other complex interventions in the rehabilitation field.

Paper 2 was particularly relevant to health professionals in practice. It included a schematic representation of the G-AP framework which created an accessible visual format to guide health professionals through a systematic goal setting process. In addition, it linked use of the goal setting process to the International Classification of Functioning, Disability and Health (WHO-ICF) (World Health Organization, 2001). This was important as the WHO- ICF provides a common language that can be used by all members of the multi-disciplinary team to (i) understand and talk about goals at the level of impairment, activity and participation, and (ii) consider how the health condition and contextual factors can influence the process.

5.6 Journal standing, journal choice and reception of submitted publications

Paper 2 was also published in Clinical Rehabilitation. Together, Papers 1 and 2 described the development of the G-AP framework. It made sense to publish both papers in the same journal to create continuity, both in terms of telling empirical story, and for the readership of Clinical Rehabilitation.

Paper 2 has received 34 citations to date (Google Scholar 21.2.15) and is in the top 35 of 'Most-Read Articles' in Clinical Rehabilitation from December 2013 till November 2014 (date accessed 11.12.14) (http://cre.sagepub.com/reports/most-read). The findings reported in Paper 2 have moved the evidence base to inform goal setting practice forward. For example, Hersh et al. (2012) used the iterative appraisal and feedback stage used within the G-AP framework to challenge the concept of *measurable* goals generated by health professionals to measure goal attainment. Instead they advocated the use of *monitored* goals that could be responsive and adjusted over time to reflect changing circumstances or new insights. This is an important conceptual shift within the goal setting literature. It moves away from the over simplistic linear relationship between measurable goals and outcomes, to an evolving, unfolding relationship between monitored goals and flexible outcomes. This is more reflective of how the goal setting process actually unfolds in day to day clinical practice.

In contrast to this, Stevens et al. (2013) used the G-AP framework to examine goal setting measurement instruments identified in their systematic review. The G-AP

framework was used to assess which stage of the goal setting process each instrument addressed. Eleven instruments were included in the review, for example the Canadian Occupational Performance Measure (Carswell et al., 2004), Goal Attainment Scaling (Turner-Stokes, 2009) and Talking Mats (Bornman & Murphy, 2006). Based on their analysis, the authors stated that (i) all instruments included a goal negotiation and appraisal/ feedback component (ii) few incorporated a goal setting and planning component and (iii) none covered all four stages (goal negotiation, goal setting, planning and appraisal and feedback). The authors concluded that no single instrument could be recommended to cover all stages of goal-setting process. These findings underline an important point – outcome measures based on goal setting are insufficient if used in isolation to guide health professionals thorough all stages of the process.

Paper 2 was discussed, and the illustration of the G-AP framework reproduced, in a book entitled, 'New Developments in Goal Setting and Task Performance' (2013) (Shilts et al., 2013). This book was edited by Edwin A. Locke and Gary P. Latham, both internationally renowned researchers in goal setting research. Inclusion of the G-AP framework in a book of this stature reflects its international standing and relevance within the goal setting field. Finally, this paper created the 'bridge' between theory and practice. As such, it created the clinical and academic platform for the next study (Paper 3) which would begin to evaluate the acceptability of the developed G-AP framework to health professionals and patients, and the feasibility of its use in practice.

Paper 3 – see appendix 3

Scobbie et al. BMC Health Services Research 2013, 13:190
http://www.biomedcentral.com/1472-6963/13/190

Implementing a framework for goal setting in community based stroke rehabilitation: a process evaluation

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Background: Goal setting is considered 'best practice' in stroke rehabilitation; however, there is no consensus regarding the key components of goal setting interventions or how they should be optimally delivered in practice. We developed a theory-based goal setting and action planning framework (G-AP) to guide goal setting practice. G-AP has 4 stages: goal negotiation, goal setting, action planning & coping planning and appraisal & feedback. All stages are recorded in a patient-held record. In this study we examined the implementation, acceptability and perceived benefits of G-AP in one community rehabilitation team with people recovering from stroke.

Methods: G-AP was implemented for 6 months with 23 stroke patients. In-depth interviews with 8 patients and 8 health professionals were analysed thematically to investigate views of its implementation, acceptability and perceived benefits. Case notes of interviewed patients were analysed descriptively to assess the fidelity of G-AP implementation.

Results: G-AP was mostly implemented according to protocol with deviations noted at the planning and appraisal and feedback stages. Each stage was felt to make a useful contribution to the overall process; however, in practice, goal negotiation and goal setting merged into one stage and the appraisal and feedback stage included an explicit decision making component. Only two issues were raised regarding G-APs acceptability: (i) health professionals were concerned about the impact of goal non-attainment on patient's well-being (patients did not share their concerns), and (ii) some patients and health professionals found the patient-held record unhelpful. G-AP was felt to have a positive impact on patient goal attainment and professional goal setting practice. Collaborative partnerships between health professionals and patients were apparent throughout the process.

Conclusions: G-AP has been perceived as both beneficial and broadly acceptable in one community rehabilitation team; however, implementation of novel aspects of the framework was inconsistent. The regulatory function of goal non-attainment and the importance of creating flexible partnerships with patients have been highlighted. Further development of the G-AP framework, training package and patient held record is required to address the specific issues highlighted by this process evaluation. Further evaluation of G-AP is required across diverse community rehabilitation settings.

6.1 Summary of the publication

The study reported in Paper 3 spanned the development and feasibility stage of the MRC guidance (Craig et al., 2008) (See Figure 4; pg. 35). Following completion of the studies reported in Paper 1 and 2; the next stage was to understand how use of the developed G-AP framework would unfold when implemented in practice. A process evaluation was conducted to meet this aim. This study was designed to examine, from the perspective of health professionals and patients, the experience of using G-AP (on a stage by stage basis) in routine practice. The studies reported in Paper 1 and Paper 2 had created a strong theoretical rational for inclusion of each stage of the G-AP framework. They also predicted what outcomes G-AP implementation could impact on and through which mechanisms. However, it was unclear if these theoretical assumptions would hold true when G-AP was used in practice. Furthermore, the feasibility of implementing G-AP and its acceptability to health professionals and patients had yet to be examined.

6.2 Ethical issues

Ethical approval for this study was granted by the Psychology Ethics Committee at the University of Stirling. NHS ethical approval was not required as the study was deemed to be a service evaluation of an intervention considered as current care. All patients and health professionals were provided with a study information sheet. Patients provided informed written consent for the interview and case note review. Health professionals provided informed written consent for the interview. The study adhered to research governance standards throughout (Medical Research Council, 2012).

This study did present some ethical considerations. The G-AP framework was being evaluated within the service in which it was developed, and the interviews were conducted by the senior physiotherapist (DMcL) within the team. These factors could have resulted in health professionals and patients feeling coerced into take part and reporting favourable experiences of using G-AP. To address these ethical concerns, patients being treated by DMcL were not included in the study. Whilst this reduced the potential number of patients that could be invited to take part, it maintained the ethical integrity of the study. Secondly, both the patient and health professional study information sheet emphasised that (i) there was no obligation to take part in the study and (ii) if they agreed to take part, they were free to change their mind and withdraw at any point.

6.3 My contribution to the publication

I developed the study concept and design, carried out data analysis and interpretation and wrote the manuscript. Sally Wyke and Diane Dixon contributed to the development of the study concept and design, assisted in data analysis and interpretation and contributed to the final manuscript. Donald McLean contributed to development of the study concept and design, collected data and assisted in data analysis. Edward Duncan assisted in interpretation of data and contributed to the final manuscript. All authors read and approved the final version of manuscript.

6.4 Critical reflection of research methodologies and methods used

There is no universally accepted definition of a process evaluation. The United Kingdom (UK) Medical Research Council Guidance on Process Evaluations of Complex Interventions (MRC Population Health Science Research Network, 2014) defined a process evaluation as:

> "*… a study which aims to understand the functioning of an intervention, by examining implementation, mechanisms of impact, and contextual factors.*" (MRC, 2014)

Process evaluations can be used at different stages in the development an evaluation of complex interventions and for different purposes. Moore et al. (2014) stated:

> "*There is no such thing as a typical process evaluation, with the term applied to studies which range from a few simple quantitative items on satisfaction, to complex mixed-method studies exploring issues such as the process of implementation, or contextual influences on implementation and outcomes*." (Moore et al., 2014)

The process evaluation reported in Paper 3 was conducted at an early stage in the development of the G-AP framework. It was concerned with both development of the framework and initial evaluation of its feasibility and acceptability in practice. The findings of this study would be an initial gauge of whether G-AP development was on the right track, or not. Overall, I am confident that the methodological approach used

was best suited to meeting the aims of this study. However, it is interesting to reflect on decisions made about the scope of the study, and its key strengths and limitations.

6.4.1 Scope of the study.

The MRC guidance describes the stage of assessing feasibility (and acceptability) as, "*vital preparatory work*" in the development and evaluation of complex interventions which can highlight problems to be addressed before progressing on to the final evaluation (Medical Research Council, 2008, pg. 10). However, decisions have to be made about how much feasibility work is required, and what the scope of it should be, on a study by study basis. In relation to the G-AP framework, I believed that an incremental approach to evaluating feasibility and acceptability was required which could incorporate on-going development of the framework and its theoretical underpinning.

The study described in Paper 3 was purposefully limited to one community rehabilitation team. However, it was the same team that had been involved in its development through the work of the Task Group described in Paper 2 (ReACH team, NHS Forth Valley). Arguably, if G-AP was going to be feasible and acceptable to use in a single context, it would be in this team.

An alternative approach might have been to conduct the process evaluation in a service that had no prior exposure to G-AP. This may have reduced the potential for bias in health professional reports of feasibility and acceptability. However, conducting the study within a service where staff members (to differing degrees) were

familiar with the G-AP process created the opportunity for an in-depth exploration of how G-AP implementation unfolded in practise on a stage by stage basis. The ReACH team was ideally placed to see opportunities to develop, adjust or augment what was already in place. This was crucial to inform the on-going development of G-AP. The study was also practicable within the resources (financial and personnel) available at the time. I was not a practising occupational therapist within the team at the time of this study, so was not involved in G-AP implementation or data collection. This removed my influence on how G-AP was used (and possibly perceived) in practice, and minimised the risk of bias during health professional interviews.

The findings of this study led to (i) practice informed revisions to the illustration of the G-AP framework (ii) important insights about partnership working and the regulatory function of goal non-attainment for some patients and (iii) development of the G-AP training programme and patient held record. It also identified important issues requiring further investigation, for example the impact of goal non-attainment on recovery. This study therefore represented an essential step in the overall development and evaluation of the G-AP framework. Without it, the subsequent Chief Scientist Office funded Implementation study would have been less well developed and possibly less likely to secure funding.

6.4.2 Research Methods used.

A 'Framework' approach developed by Richie and Spencer (1994) was used to guide data management, synthesis and interpretation. This approach has been developed in

the context of applied health services research. It creates a transparent, systematic process to guide the analytic process and shows how the findings have been obtained. Five key stages to the Framework approach have been descried (see Box 3).

Using a Framework approach enabled charting, and subsequent interpretation, of the data into expected (e.g. G-AP acceptability) and emergent (e.g. partnership working) themes. This was useful and helped broaden my understanding of patients' and health professionals' experiences both across, and between, different themes. For example, the range of experiences/views about using the patient held record could be explored from the patients' perspective, the health professionals' perspective, and then comparisons made between the two.

Box 3. Stages of the Framework Approach (Adapted from Richie and Spencer 1994)

1. **Familiarisation:** Gain an overview of the richness, depth and diversity of the data.
2. **Identification of a thematic framework**: Identify key issues, concepts and themes that data can be examined within, and linked to.
3. **Indexing**: The process by which the thematic framework is applied to the data.
4. **Charting**: The data are 'lifted' and rearranged according to their thematic reference. A chart which allows data to be summarised under different themes and sub themes. The chart can be set up to conduct a thematic analysis (looking at each theme across all cases) or a case analysis (looking at each case across all themes).
5. **Mapping and interpretation**: Explaining what is going on in the data, e.g. mapping the range and nature of a phenomena or finding associations.

Sound qualitative analysis depends on the availability of a rich data set covering the topics of interest. A good sampling frame, an adequate number of participants and a

skilled interviewer (who can probe effectively across the range of topics) are important pre-requisites to gathering a rich data set (Francis et al., 2010). In this study, a sampling frame had been devised to target recruitment of health professionals and patients for interview. Recruitment to the sampling frame was partially achieved. We aimed to recruit 12 patients with a range of disability scores, but managed to recruit eight, only one of which had a 'severe' level of disability. We recruited health professionals as intended, except for a psychologist. This was not possible due to a staff secondment at the time of the study. With the benefit of hindsight, I now consider not including rehabilitation assistants in the sample as a limitation. At the time it was judged that rehabilitation assistants would not be responsible for implementing all aspects of the framework and therefor would be limited in what they could report on. However, gathering their views and experiences about the aspects of G-AP they did implement (or did not implement) and their perceptions of patients' responses to it would have added to the evaluation.

Data saturation refers to the point in data collection when no new additional data are found that expands on a conceptual category (Glaser. & Strauss, 1967). On reaching data saturation, the researcher can be (more) confident that they have explored and uncovered all aspects of a particular phenomenon, and not missed any important concepts within it. While I am confident data saturation was reached on most themes and subthemes in this study, it was not achieved in one sub-theme i.e. health professionals use of coping plans. The researcher conducting the interviews (DMcL) was a health professional with vast experience of clinical interviewing but limited

experience of qualitative interviewing. The skilled probing and prompting required during qualitative interviews may have been taken to a greater depth by an experienced qualitative researcher, and the range of views and experiences relating to health professional use of coping plans captured. As with all qualitative studies, findings can only be based on the data collected. This study was limited in what it could tell us about health professionals' use of coping plans due to the limited data available within this theme.

6.5 Critical review of the original contribution of the submitted work to the field.

Paper 3 offers a transparent account of an important stage of development and evaluation of the G-AP framework. A particular strength of the study was its aim to examine and explore the experience of G-AP implementation from the perspectives of both health professionals and patients. Previous studies have tended to focus on either the health professional (Playford et al., 2000; Levack et al., 2009; Lloyd et al., 2014) or patient (Cott, 2004; Holliday et al., 2007a) perspectives. However, recent reviews of the goal setting literature have found that patients' and health professionals' views and experiences of the goal setting process, and their role within it, often differ (Rosewilliam et al., 2011; Sugavanam et al., 2013). Understanding these differences may offer important insights to develop a goal setting process that is acceptable and effective, at both the health professional and patient level.

An important finding of this study was health professionals' concerns about the potential negative impact of goal non-attainment on patients' wellbeing. In contrast to this, patients' accounts suggested that not attaining important goals had led them to accept limitations imposed by the stroke, and reconsider what was achievable. Previous studies have found that health professionals influence the goal negotiation process (in both subtle and explicit ways) to ensure that set goals are, in their view, achievable (Barnard et al., 2010; Levack et al., 2011). The findings of this study suggest that goal non-attainment may have an important regulatory function, and that prioritising achievable goals may deny patients an opportunity to benefit from the experience of setbacks or failure. This finding highlights an under researched aspect of the goal setting process within the rehabilitation setting that warrants further attention.

6.6 Journal standing, journal choice and reception of submitted publications.

Paper 3 was published in BMC Health Services Research. This is an open access, peer-reviewed journal that considers papers on all aspects of health services research. It has a current impact factor of 1.66 and operates a comprehensive, open peer review system. The paper was reviewed, and subsequently recommended for publication, by three highly respected researchers in the goal setting field namely, Dr Diane Playford (University College London, United Kingdom), Professor Kathryn McPherson (Auckland University of Technology, New Zealand) and Dr William Levack (University of Otago, New Zealand).

It was a strategic decision to publish this paper in an open access journal as I believed it would be of particularly interest and relevance to health professionals in practice. Being open access, BMC Health Services Research could be easily accessed by health professionals (and students) as well as academics. It also allowed the resources that supported G-AP implementation to be attached as additional files (for example the G-AP framework implementation guide and the G-AP patient held record (see Appendix 3). This would not have been possible in a journal with strict word limits and space restrictions. In my experience, many teams invest much time and effort to developing their own in-house resources to support local goal setting practice. Being able to share on-line access to the resources used to facilitate G-AP implementation provided health professionals in practice with the option to use (or modify) the G-AP resources for use in their own setting. The intention was not to be prescriptive about what resources *should* be used to support G-AP implementation, but to share the resources developed and used by one community rehabilitation team.

This 2013 paper has already achieved the status of 'Highly Accessed' (4932 accesses by 14.12.14). To date it has received six citations (Google Scholar 21.2.15) including within in a book chapter prepared by the New Zealand based research group McPherson et al. (2014) entitled, "*MEANING as a Smarter Approach to Goals in Rehabilitation*" (McPherson et al., 2014). In their chapter, McPherson et al. discuss the limitations of SMART (Specific; Measurable; Attainable; Relevant and Timely) goals. In particular, they note that SMART goals do nothing to address the intention-

behaviour gap. Paper 2 is cited in their discussion about the use action plans and coping plans to bridge the intention-behaviour gap. The authors then cite Paper 3 to argue that action plans and coping plans are likely to be difficult to implement in practice, and that on the basis of their recent review (Kersten et al., 2014), suggest that '*If-Then plans'*[3] may offer an evidence based, easy to use alternative. I do not fully agree with the authors expressed view that action plans and coping plans are difficult to implement in practice. The findings reported in Paper 3 suggested that implementation problems were not due to a fundamental problem with action planning or coping planning, but rather due to inadequate training and health professionals not habituating use of these aspects of the G-AP framework into their practice. Implementation of *'If-Then'* plans could arguably by undermined by the same issues. However, these citations demonstrate that Paper 3 (and Paper 2) is recognised by the international research community, and has contributed to the academic debate and discussion about developing goal setting theory and practice in the rehabilitation setting.

[3] If-Then plans highlight the link between a specific cue and an intended behaviour or action (Hagger & Luszczynska, 2014). For example, in a rehabilitation context focusing of walking practise, this might translate into: "**If** it is 11 am, **then** I will walk to my front gate" (McPherson et al., 2014, pg. 111).

Paper 4 – see appendix 4

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RESEARCH PAPER

Goal setting practice in services delivering community-based stroke rehabilitation: a United Kingdom (UK) wide survey

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Purpose: We investigated the nature of services providing community-based stroke rehabilitation across the UK, and goal setting practice used within them, to inform evaluation of a goal setting and action planning (G-AP) framework.

Methods: We designed, piloted and electronically distributed a survey to health professionals working in community-based stroke rehabilitation settings across the UK. We optimised recruitment using a multi-faceted strategy.

Results: Responses were analysed from 437 services. Services size, composition and input was highly variable; however, most were multi-disciplinary (82%; n=335/407) and provided input to a mixed diagnostic group of patients (71%; n=312/437). Ninety one percent of services (n=358/395) reported setting goals with ''all'' or ''most'' stroke survivors. Seventeen percent (n=65/380) reported that no methods were used to guide goal setting practice; 47% (n=148/ 315) reported use of informal methods only. Goal setting practice varied, e.g. 98% of services (n=362/369) reported routinely asking patients about goal priorities; 39% (n=141/360) reported routinely providing patients with a copy of their goals.

Conclusions: Goal setting is embedded within community-based stroke rehabilitation; however, practice varies and is potentially sub-optimal. Further evaluation of the G-AP framework is warranted to inform optimal practice. Evaluation design will take account of the diverse service models that exist.

7.1 Summary of the publication

Understanding (i) the context in which a complex intervention will be delivered and (ii) the comparison intervention is important ground work in the development and evaluation of complex interventions (Campbell et al., 2000; Campbell et al., 2007). Could the developed G-AP framework be implemented within the range of community rehabilitation services that exist in the UK? How was G-AP similar to or different from 'usual' goal setting practice? The UK wide survey described in Paper 4 was designed and conducted to provide information that would address both of these questions (See Figure 4; pg. 35).

7.2 Ethical issues

NHS ethics approval was not required for this survey as it was to be completed by staff recruited on the basis of their professional role. Ethical approval was granted from The School of Nursing Midwifery and Health Research Ethics committee at the University of Stirling.

A Cochrane systematic review (Edwards et al., 2009) found that use of non-monetary incentives (such as donations to charity) increased the odds of response by more than a half. The participant survey information sheet (See Appendix 8) stated:

> "*For every 20 completed surveys, a £20 donation will be shared equally between Chest Heart and Stroke Scotland and the Stroke Association to help stroke survivors and their family members.*"

The ethics committee were concerned that this incentive might be construed as "*moral coercion*" and asked me to re-consider it. I had given some thought to different types of incentives, such as respondents being entered into a prize draw, where the winner would receive something of use to their service e.g. a text book relevant to community rehabilitation. However, it was difficult to think of a 'prize' that was likely to act as an incentive for the range of health professionals that might respond to the survey. I believed a donation to stroke charities, where stroke survivors and their families could directly benefit, was better option. I did consider the issue of moral coercion but felt that, on balance, there was a minimal risk of participants feeling coerced as the proposed donation to a stroke charity for questionnaires received ensured there was no direct link between individual participants completing the questionnaire and money being donated. The ethics committee accepted this justification and ethical approval was granted.

UK wide research and development (R&D) approval was sought. Nine of the 14 health boards in Scotland provided approval. The remaining five (NHS Lothian, NHS Borders, NHS Tayside and NHS Dumfries and Galloway) concluded that the survey did not require R&D approval in their area. All six relevant boards in Wales and all four relevant trusts in Northern Ireland provided approval. The head of Research Management and Governance in England concluded that approval was not required for all English NHS sites.

The process of achieving UK wide R&D approval was a challenging and protracted process. Each health board/ trust within Scotland, England, Ireland and Wales had its own R&D approval criteria and processes in place. Although the NHS Research Scotland Permissions Coordinating Centre facilitated the process, there was still a need to link with each individual R & D department in order to meet local standards. This was achieved but took nine months to complete. The difficulties of obtaining UK wide R&D approval have been described (Thompson & France, 2010). I did consider limiting this survey to Scotland to expedite the R&D process, but decided not to. My intention was that the G-AP framework could be used in community rehabilitation services across the UK, not just in Scotland. Therefore, A UK perspective of community rehabilitation contexts and 'usual' goal setting practice used within them was important and worth pursuing.

7.3 My contribution to the publication

I was responsible for the development of the study concept and design, development and distribution of the survey questionnaire, conducting the analysis and writing the manuscript. Edward Duncan, Marian Brady and Sally Wyke assisted with development of the study concept and design, development of the survey questionnaire, advised on the analysis and helped to revise the manuscript. All authors read and approved the final manuscript.

7.4 Critical reflection of research methodologies and methods used

Survey methods have been successfully used to inform the development and evaluation of other complex interventions, for example an oral health care intervention in stroke rehabilitation settings (Talbot et al., 2005) and a physiotherapy intervention for pelvic organ prolapse (Hagen et al., 2004). I am confident that the methodological approach used in the Paper 4 was the right one to meet the aims of this study. However, there are issues related to (i) the positioning of this study within the programme of research and (ii) the survey methodology used that are worthy of consideration. These will be discussed in the next section.

7.4.1 Positioning of survey within the programme of research

I now think this study would have been better positioned after Paper 2 as the findings would have led me to consider different approaches to the design of the process evaluation described in Paper 3. One key finding of the survey was that, unlike in-patient stroke rehabilitation, community based stroke rehabilitation is not typically delivered by stroke specific services. The implication of this finding is that the clinical utility of the G-AP framework could potentially be enhanced if used to inform goal setting practice with a mixed diagnostic group of patients, not just people recovering from stroke. Had I been aware of this when designing the process evaluation, I would have considered the advantages and disadvantages of implementing G-AP with all patients seen by the team and may have extended the sampling frame to include patients with other diagnosis (e.g. head injury and degenerative neurological conditions).

This approach would have provided useful information about the feasibility, acceptability and perceived usefulness of implementing G-AP with the range of patient groups seen by the service. However, it would also have created challenges. The recovery trajectory for people who have had a stroke is (usually) different to those who have a degenerative neurological condition, such as multiple sclerosis or motor neurone disease. With these patient groups, managing deterioration (which may include end of life care) is an important part of the rehabilitation process which is likely to influence how the goal setting process unfolds. Trying to capture the range of experiences and views reported by people with different diagnoses may have been beyond the scope of this study.

On balance, I am satisfied that the study design used in Paper 3 was the right one for this stage in the development and evaluation of the G-AP framework. However, acknowledging that most community rehabilitation services see stroke survivors alongside other diagnostic groups will be a consideration during on-going research.

7.4.2 Survey methodology

Prior to embarking on this study, I attended a three day course at the University of Bristol entitled, *Questionnaire design, application and data interpretation*[4]. This was a useful course that informed my knowledge and thinking about development of the questionnaire for use in the planned survey (see Appendix 8 for survey questionnaire), for example phrasing and formatting questions; content validity and reliability of the

[4] See: http://www.bristol.ac.uk/social-community-medicine/shortcourse/scquesdesanal.html Last accessed 21.2.15.

questionnaire; administering the questionnaire; maximising response rates, analysing data and writing up surveys for publication in academic journals.

My approach to this study was also informed by the Tailored Design Method to survey methodology described by Dillman et al., (2009). Briefly, this method is based on the principal that survey methodology should be tailored to individual studies. An important feature of this approach is its 'social exchange' perspective on behaviour. Applying social exchange principals to survey design aims to do three things (i) *increase the perceived benefit* of responding (e.g. by providing information about the survey, giving tangible rewards, making the questionnaire interesting etc.), (ii) *reduce the perceived costs* of responding (e.g. by making it convenient to respond, make the questionnaire short and easy to understand, minimise requests for sensitive information etc.) and (iii) *establish trust* so that respondents believe the benefits of completing the survey outweigh the costs (e.g. make the survey look legitimate; ensure confidentiality etc.).

Many principals of 'social exchange' described by Dillman et al., (2009) were adhered to during the design of this survey. See Table 2 for examples of social exchange principals used.

Table 2. Social exchange principals used design of the survey

Reduce perceived costs	Increase perceived benefits	Establish trust
Participant information sheet (see Appendix 7) was designed using e-mail editing software which created a visually pleasing format that was retained during e-mail distribution Short questionnaire designed that could be completed in 5-10 minutes	Incentive of £20 donation to stroke charity for every 20 completed surveys Respondents had the option to request a copy of the results	University of Stirling and Chief Scientist Office logos were used to optimise the legitimacy of the survey All ethics and R&D approvals in place were detailed Contact details of me and researcher independent of the study included for queries and/ or concerns.

The Tailored Design Method also aims to reduce the following types of survey error: C*overage error* (by achieving adequate coverage of the entire population); *Sampling error* (by achieving a large enough sample of the desired population); *Non-response error* (by using a survey implementation system that encourages most people in the sample to respond) and *Measurement error* (by creating well-constructed questions that will elicit thoughtful and honest answers to questions).

Absence of a centrally held list of community rehabilitation services in the UK, or any other systematic way of identifying them, created a challenge when considering survey coverage and sampling. I chose to build on recruitment strategies that had been successfully used by surveys of a similar nature (Enderby & Wade, 2001; Holliday et al., 2005) and used a convenience sampling method. I am satisfied that adequate

coverage was achieved in this survey. As well as eliciting a high number of total responses, there was good representation from Scotland, England, Northern Ireland and Wales from a range of different types of services. However, the recruitment method did not allow for calculation of response rates or non-responders.

7.4.3 Questionnaire design and piloting

Measurement error was minimised by the attention given to the overall questionnaire design and construction of individual questions and the rigorous piloting phase. However, having conducted the survey and analysed the responses, there are modifications I would have made to Question 1 and Question 18 of the survey. These are detailed below.

Question 1. What types of patients are seen by your team?

Stroke patients only	
Mixed patient group including stroke	

This was an important question to include as it generated a key finding, i.e. that community rehabilitation services tend to see a mixed group of patients including stroke. With this knowledge (which developed as a consequence of the survey responses) I now realise it may have been useful to have added a further question to identify what the other diagnostic groups were. This information could have easily been gathered using Survey Monkey. Respondents that answered "*Mixed patient group including stroke*" could have been filtered to answer a follow up question asking

about what other types of patients they saw, for example - patients with degenerative neurological conditions; orthopaedic conditions; rheumatology patients, care of the elderly etc. This would have resulted in a more detailed understanding of the types of patients seen by community rehabilitation services and allowed for further consideration of the relevance and potential clinical utility of G-AP across a broader patient group.

Question 18. Which method does your team use to guide goal setting practice? *(tick all that apply)*

- ☐ No particular method is used
- ☐ Goal Attainment Scaling (GAS)
- ☐ The Canadian Occupational Performance Measure (COPM)
- ☐ Goal Setting and Action Planning Framework (G-AP)
- ☐ Individual team members use their own method
- ☐ The team has developed its own method
- ☐ Other method (*please name*).....

This question was well designed for the following reasons (i) it including a 'no particular method is used' option and therefore did not assume that methods were used to guide goal setting practice (ii) it gave respondents the opportunity to highlight the use of their 'own methods' (either at the individual or team level) and (iii) it included an 'other' category to capture any other methods used not included on the list.

However, on reviewing the 'other' responses, I noted that a small number of respondents (3%; n=11/380) had recorded 'SMART goals' as a method of guiding practice. This was an interesting finding. I had not explicitly included 'SMART goals' on the response list as I had considered this to be an acronym that is used to construct a measurable goal rather than a 'method' to guide goal setting practice. Furthermore, neither my collaborators on this study nor any of the piloting participants had identified 'SMART goals' as a method that should be included either.

Nevertheless, approaches to formulating SMART goals have been described (Bovend'eerdt et al., 2009); 'SMART goal planning' has been included in a list of identified approaches to goal setting (Levack & Siegert, 2014a) and McPherson et al. (2014) have acknowledged that SMART goals have, "*prevailed for so long, and so widely in rehabilitation*," (McPherson et al., 2014, pg. 106). On reflection, I now think it would have been beneficial to have included a separate question about 'SMART goals' in the questionnaire that would have sought to clarify the extent to which health professionals consider they use 'SMART goals' in practice.

All of the issues noted above underline the importance of the development stages of survey methodology. Overall, I am satisfied this survey was conducted to a high standard and that the development and piloting work was rigorous. However, I realise it is much easier to be clear about what you might have done differently when the analysis is complete.

7.5 Critical review of the original contribution of the submitted work to the field.

The findings of the survey are the most extensive and detailed description of community based stroke rehabilitation services in the UK and goal setting practice used within them to date. The contribution this study makes to the field has been further enhanced making and explicit (and original) link between the survey findings and further evaluation of the G-AP framework.

The difficulties of designing experimental studies to test the effectiveness of goal setting in rehabilitation have been described (Levack & Siegert, 2014b). This study sought to inform decisions about the next stage of G-AP evaluation, and to have a better appreciation of the advantages and disadvantages of different evaluation designs. These decisions are common to the evaluation of all complex interventions in (community) rehabilitation settings. By making this a central theme of Paper 4, we have highlighted the importance of pro-actively gathering information to inform how the evaluation of complex interventions should proceed. This is essential for the design of robust evaluations that will improve the evidence base to support, and inform, practice in community rehabilitation settings.

7.6 Journal standing, journal choice and reception of submitted publications.

Disability and Rehabilitation is an international, multidisciplinary rehabilitation journal with a five year impact factor of 1.973 (http://informahealthcare.com/). Submissions to the journal cover a wide range of topics, from across all disciplines, in the

rehabilitation field. All submissions are peer reviewed. All papers must include an *Implications for rehabilitation* section which summarise for the reader (in bullet point format) what the clinical implications of each published study are.

This journal was chosen as the findings of this survey were judged to be of relevance and interest to its readership. There is also the option to make published papers open access. This was an important consideration for this study which was funded by the Chief Scientist Office who has a policy of open access for papers published as a result of their funding.

This paper was published on the Disability and Rehabilitation website 'Early Online' section on 22 Sep 2014 and in March 2015 became open access. As yet (13.2.15), there are no citations of this paper recorded on Google Scholar. However, there is evidence that Paper 4 is being well received. I have been contacted by a research team from the University of Sydney in Australia who are conducting a survey to explore goal setting practice in with people who have chronic low back pain. This group would like to base their own survey questionnaire on the one we developed. They are now in the process of modifying our questionnaire to suit their study population and rehabilitation context. This is a good endorsement of the questionnaire used in our survey. Also, basing their questionnaire on the one we have developed will facilitate development of a cumulative evidence base about goal setting practice in different rehabilitation contexts.

I was also invited to present this work at the Community Therapy Network (http://www.communitytherapy.org.uk) conference in October 2013. This presentation was well received and resulted in me receiving a further invitation from Andrew Bateman, the Director of the Oliver Zangwill Centre for Neuropsychological Rehabilitation (Cambridgeshire Community Services NHS Trust) to present this work at an 'inspirational event' for community allied health professional staff.

Discussion and conclusions

8.1 Introduction

I embarked upon this programme of research as a practising occupational therapist working in a community rehabilitation team in the NHS. The main impetus behind it was my belief that goal setting offered a powerful way to engage patients in the rehabilitation process and target rehabilitation interventions to meet their personal needs, priorities and preferences. However, I was frustrated at the lack of theory and evidence to guide 'best' practice which resulted in variable delivery and quality of goal setting practice. This thesis set out to address this theory-evidence-practice gap by developing and conducting an initial evaluation of a theory and evidence based framework to guide goal setting practice in community based stroke rehabilitation settings. I have argued that by optimising theory based goal setting practice, patients would consistently be given the best opportunity set, pursue and attain their personal rehabilitation goals.

In this PhD submission, I have presented a series of four published papers (see Table 1; pg. 33) which detail studies conducted to meet the stated aims (see Section 2.7; pg. 32). The MRC guidance for the development and evaluation of complex interventions (Campbell et al., 2000; Craig et al., 2008; Medical Research Council, 2008) was used to structure and inform the programme of research. Each study has made an important, incremental, contribution to development and initial evaluation of the G-AP framework. They have also made a methodological contribution to the literature describing the development and evaluation of highly complex interventions. In this

section, a summary of the main findings of Papers 1, 2, 3 and 4 are presented under each study aim and the implications for future research and clinical practice discussed.

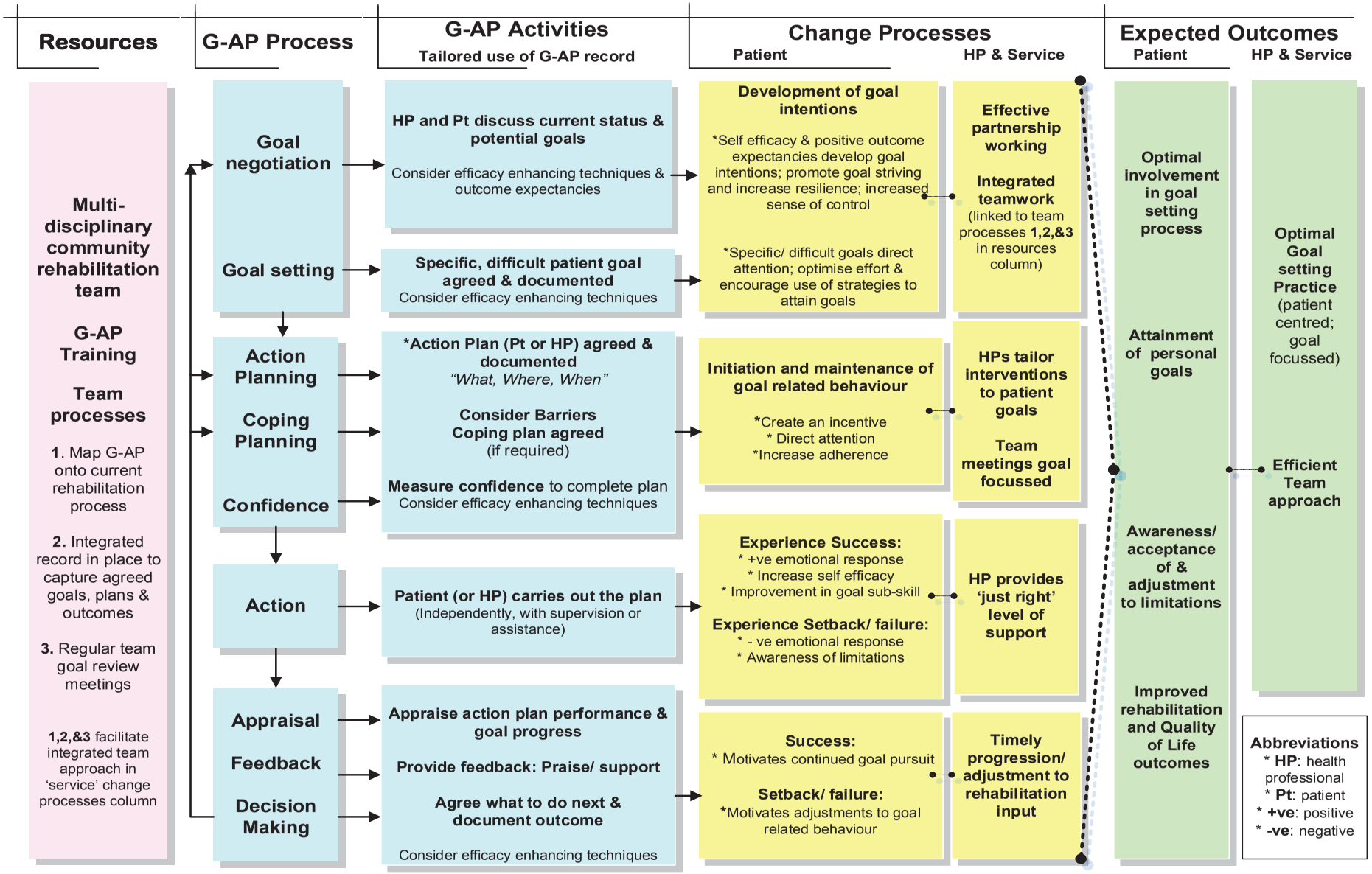
8.2 Summary of main findings

8.2.1 Aim 1.

To use the MRC guidance to inform systematic development of an evidence and theory based framework to guide goal setting practice in community based stroke rehabilitation settings

An evidence and theory based G-AP framework has been developed to guide goal setting practice in community based stroke rehabilitation settings. The G-AP logic model presented in Figure 5 (see Section 5.4.1; pg. 54 for introduction to logic models) synthesises the findings of Papers 1, 2 and 3 in a one page format linking (i) resources required to implement G-AP ***to*** (ii) stages of the G-AP process ***to*** (iii) G-AP activities ***to*** (iv) change processes, and finally ***to*** (v) expected outcomes. By creating these links, the logic model creates a conceptual map of the G-AP framework *(what)*; its application in practice *(how)*; its theoretical underpinning (*why*) and what impact it is predicted to have (*so what*).

Figure 5. G-AP Logic Model



The key findings contained within the logic model are summarised below.

(i) Setting rehabilitation goals is only one stage in the goal setting process

Findings presented in Papers 1-3 provide the theoretical and clinical rationale to support the inclusion of four stages in the goal setting process (See Appendix 3; Figure 1, pg. 10). Following goal negotiation and goal setting, a stage is required to motivate the patient to bridge the intention-behaviour gap i.e. to translate their goal *("where I want to get to*") into action ("*this is how I'm going to get there*"). Within G-AP, this stage incorporates action planning, coping planning (if necessary) and measuring confidence to complete plans. In the next stage, the patient has the opportunity to carry out the agreed action plan and experience the goal related behaviour. In the final stage, progress is reviewed, feedback given and decisions made about what to do next. This stage facilitates self-regulation of the patient, and of the G-AP process, in response to success and set-backs.

(ii) Patient experience of setbacks or failure can result in different change processes and outcomes

The findings presented in Paper 3 (See Appendix 3; pg. 6) suggested that goal non-attainment can help patients to understand, and adjust to, their limitations. This finding expanded on the work of the causal modelling exercise described in Paper 2 (see Appendix 2; Figure 2, pg. 6) by identifying different change processes and outcomes resulting from failure to complete action plans and attain goals. Consequently, within the G-AP Logic Model, outcomes at the patient level are not

restricted to measures of goal attainment, but include measures related to acceptance of, and adjustment to, limitations.

(iii) Outcomes at the health professional and service level should be included when evaluating the effectiveness of the G-AP framework

Findings of Paper 3 expand on the causal modelling exercise by highlighting that the G-AP process does not just operate at the patient level (e.g. goal attainment; accepting/ adjusting to limitations). It also operates at the health professional level (e.g. optimising goal setting practice; creating effective partnerships with patients; making timely adjustments to rehabilitation input) and service level (e.g. integrated team approach). This is an important finding that the logic model helps to illustrate. Using the G-AP process does not just impact on patients' behaviour (as it was primarily designed to do). It impacts on health professionals' behaviour too, which in turn impacts on the service overall. The G-AP logic model goes some way to making these connections explicit at a theory and practice level.

(iv) It is vital to consider the resources needed to achieve optimal and sustainable G-AP implementation

Previous evidence has demonstrated that interventions can be successfully implemented in some health care settings, but not in others (Hoddinott et al., 2010) and that features of the practice setting (or context) will influence the extent to which complex interventions can be successfully delivered (Tomoaia-Cotisel et al., 2013). The findings reported in Paper 2 and Paper 3 have highlighted (i) the importance of interdisciplinary working to implement G-AP (ii) the need for G-AP training to precede

implementation (iii) the importance of regular goal focused team meetings and (vi) the need for a documentation system in place to record agreed goals and action plans. Without these resources and service features in place, G-AP implementation is less likely to be successful and sustainable over time. This is an important consideration when designing a future evaluation of G-AP in diverse service settings.

(v) There is a need to tailor G-AP implementation individual patients

The findings reported in Paper 3 about use of the G-AP patient held record and the need for flexible partnership working between health professionals and patients (see Appendix 3; pg. 7-8) highlight the need to tailor G-AP implementation to individual patients. A useful distinction has been made about the '*form*' and '*function*' of the components of complex interventions (Hawe et al., 2004). Form refers to *how* the intervention component is delivered. Function refers to *what* the desired effect of the intervention component is or what it is hoping to achieve. Hawe et al. (2004) have suggested that the *form* of individual components of complex interventions can, and should, be tailored to individual contexts and people, as long as they retain their intended function. For example, the function of the G-AP patient held record (see Appendix 3; Additional files 2 - 5) is to ensure that health professionals and patients have an up to date record of agreed goals, plans and outcomes. What form the G-AP record takes e.g. whether it is in a paper or electronic format or whether it uses words or pictures is irrelevant as long as it can fulfil its intended function. This principal will be considered in future studies, particularly in relation to evaluating the fidelity of G-AP implementation.

8.2.2 Aim 2.

To evaluate the acceptability of the developed framework, from the perspective of patients and health professionals, and the feasibility of its use in routine practice.

The study reported in Paper 3 sought to address this aim in the context of one community rehabilitation team. Whilst the G-AP framework was found to be broadly acceptable and feasible to use in routine practice, the following issues were raised:

- Implementation of novel aspects of the G-AP framework was inconsistent across team members i.e. coping planning, measuring confidence to complete action plans and implementing appraisal and feedback in an action plan by action plan basis.
- Health professionals had concerns that the appraisal and feedback stage made it explicit to patients if progress was not being made which could have a negative impact on their wellbeing.
- Whilst heath professional and patient reports suggested that use of the patient held record had many positive outcomes (e.g. encouraging family involvement in the process and keeping patients and health professional(s) 'on track' with rehabilitation), use of the record was reported to have a negative impact on information availability/sharing in department based weekly goal review meetings and was not acceptable to all patients.

Overall, patient and health professional reports suggested that acceptability and feasibility issues raised were not due to a fundamental problem with the G-AP framework or its theoretical underpinning. Instead, reported issues were related to **training** (e.g. G-AP training had not highlighted the regulatory function of goal non-attainment or focused on the theory underpinning action planning and coping planning) and **implementation** (e.g. use of the G-AP patient held record had not been tailored to individual patients).

This is an important distinction. The benefit of taking a systematic, iterative approach to the development of complex interventions as outlined in the MRC guidance (Craig et al., 2008; Medical Research Council, 2008) is that it creates a series of 'checks' where evidence is examined and decisions are made about whether it is sensible to proceed with development and evaluation of the intervention or not. Had fundamental problems with the G-AP framework been identified (e.g. all health professionals' reporting it was totally unworkable in routine practice or patients reporting negative impacts on their recovery), I would have had to consider whether it was sensible to take G-AP development and evaluation to the next stage. This, however, was not the case. The findings of Paper 3 highlighted areas in which G-AP could be improved (see Appendix 3; pg. 9). These were addressed prior to embarking on the CSO funded Implementation study (see Appendix 6).

8.2.3 Aim 3.

To understand the nature of current goal setting practice and the community rehabilitation contexts in which it is delivered.

The survey reported in Paper 4 provided important contextual information about the services providing community based stroke rehabilitation and 'usual' goal setting practice used within them. The main findings of the survey are summarised as follows:

- Goal setting is used routinely within community based stroke rehabilitation settings but reported practice is highly variable and patient involvement in the process is inconsistent. The findings of the survey suggested that there is likely to be overlap between 'usual' goal setting practice and practice informed by the G-AP framework. However, there are critical differences (e.g. use of planning and the option to adjust or disengage from unattainable goals) that warrant further investigation.
- Layers of complexity exist within services providing community based stroke rehabilitation. Services are likely to differ in terms of their profile (e.g. size, staff configuration); the patients they see; the nature of the input provided and the structures in place to support goal setting practice. The complexity and nature of community rehabilitation services is likely to continue to evolve as new health and social care policies are introduced (Department of Health n.d.[5]; Scottish Government n.d.).

[5] n.d. no date

Understanding contexts is vitally important in health services research, particularly in relation to highly complex interventions (Wells et al., 2012; Tomoaia-Cotisel et al., 2013). Findings of the survey have highlighted the variability of community rehabilitation service contexts and goal setting practice used within them. These findings will inform the design of an evaluation of the effectiveness of G-AP in practice.

8.3 Implications for further research

In the following section, I will discuss implications for research relating specifically to the G-AP framework, then implications relevant to the wider research community.

8.3.1 Implications for research relating to the G-AP framework

The study findings summarised above have informed development of the G-AP framework and its implementation in practice. Preliminary findings of the CSO Implementation Study have been reported to the funder (see Appendix 6). Final analysis and reporting of this data will inform further development of the G-AP logic model. The next stage will be to design a study to evaluate the effectiveness of G-AP. This will require decisions to be made about the most appropriate design and is likely to involve trade-offs between the strengths and limitations of each (Scobbie et al., 2014) (see Appendix 4, pg. 6). Careful consideration will be given to a number of issues within the study design including (i) the mode of delivery of G-AP training (ii) the outcomes chosen to measure the expected change (iii) evaluation of the impact of G-AP on family and carers (if any) and (iv) inclusion of a cost benefit analysis. These issues are discussed below.

The CSO implementation study evaluated the use of online G-AP training (http://www.g-apframework.scot.nhs.uk/Default.aspx) in combination with a face to face training day (See Appendix 6). The online training was developed to (i) reduce the length of time that team members were removed from direct patient care and (ii) to allow individual team members to complete the training at a time that was convenient to them. Analysis of the G-AP training questionnaire and focus group data about health professionals' perceptions of G-AP training will inform which mode(s) of G-AP training delivery will be most feasible and best equip team members to deliver G-AP in routine practice. These findings may also inform delivery of other training interventions being developed for use in community rehabilitation settings.

Choosing appropriate measures to capture the expected change as a result of G-AP implementation will be a critical component the study design. At the *patient level*, the possibilities include measures of patient involvement in the goal setting process, goal related outcomes, mood, quality of life and wellbeing. At the *health professional* and *service level*, possibilities include measures of quality of goal setting practice (e.g. the extent to which goal setting practice is patient centred and goal focussed) and duration and intensity of rehabilitation input. Measures will also be included to examine whether G-AP exerts its influence through anticipated change processes. For example, at the *patient level*, measures of self-efficacy and adjustment to limitations will be considered. At the *health professional* and *service level*, measures related to goal setting practice (e.g. adherence to G-AP process) and teamwork processes (e.g. interdisciplinary nature of goal review meetings) will be considered.

The importance of family member participation in the rehabilitation process has been underlined (Howe et al., 2012). The findings reported in Paper 3 suggested that use of the G-AP patient held record created an opportunity for family member involvement in the G-AP process (see Appendix 3, pg. 7). The CSO implementation study sought to gather family member (or carer) views about the G-AP process and their participation in it (see Appendix 6). Unfortunately, recruitment issues did not allow for the views and experiences of carers to be represented in the results. This will be a key area for consideration when developing a study design to evaluate the effectiveness of G-AP.

Finally, inclusion of a cost-benefit analysis will be embedded within any future G-AP evaluation. Community rehabilitation services are under pressure to provide services to more patients without extra resources to meet the demand. Any costs to the service have to be balanced against the potential benefits. This information will be gathered and reported so that services can decide if G-AP is worth investing their resources in or not.

8.3.2 Implications for the wider research community

This thesis has advocated the need to move away from an acceptance that goal setting is inherently the right thing to do in rehabilitation settings and that current practice is satisfactory, to adoption of a more critical stance. It argues for the need to develop goal setting interventions that can be clearly described in terms of (i) what their key components are (ii) how they are expected to work (iii) what outcomes they are likely to impact on and (iv) how they can be tailored within different rehabilitation settings

(Scobbie & Dixon, 2014, pg. 214). This is a prerequisite for the development of a commutative evidence base to underpin goal setting practice and to address the key question of whether goal setting interventions are effective or not.

Development and evaluation of complex interventions is an evolving science. The series of studies included within this thesis has made a methodological contribution to the literature by describing a systematic, transparent account of G-AP development and evaluation. In particular, this work tried to meet the challenge of developing and evaluating a complex intervention (*the G-AP framework*), for use by a wide range of professionals *(stroke rehabilitation teams)* in a highly variable care setting (*community based rehabilitation settings*) with a patient group who often have multiple and complex needs (*stroke survivors*). This complexity and variability reflects the reality of routine clinical practice. Embracing and working with it, rather than simplifying or overlooking it, is necessary if complex interventions (such as the G-AP framework) are to prove effective in optimising rehabilitation and patient outcomes in routine clinical practice.

G-AP has been developed for use in community based stroke rehabilitation settings. However, it has the potential to be developed for use in other settings. For example, Boa (2013) used G-AP as the basis for development of a **G**oal setting and **A**ction **P**lanning framework for use in **P**alliative **C**are (G-AP- PC). The development and initial evaluation of G-AP PC took place within a Scottish hospice setting. G-AP and G-AP PC share the same key stages. However, there are additional theories used to inform the

G-AP PC process that were informed by a review of the palliative care literature (Boa et al., 2014) (e.g. Hope Theory - see Section 4.4.3; pg. 45 for review of Hope Theory). There are also differences in how the stages are implemented in practice. For example, in the goal negotiation phase, G-AP PC encourages patients to consider, "*What's really important to you just now*?" This particular approach to goal negotiation was informed by a series of task group meetings with health professionals at the hospice who reviewed G-AP and adapted the approach by trying it in practice with a range of patients. The final wording chosen was sensitive to the unpredictable and often speedy nature of decline that people are dealing with at the end of their lives.

Finally, health professionals' perceptions about the difficulties of including stroke survivors with cognitive and/ or communication difficulties in the goal setting process have been reported within this thesis (Scobbie et al., 2013) (see Appendix 2, Table 2) and elsewhere (Rosewilliam et al., 2011; Sugavanam et al., 2013). Additionally, people with communication or cognitive difficulties are often excluded from studies examining the effects and experiences of goal setting in stroke rehabilitation settings (Sugavanam et al., 2013). This limits what the evidence base can tell us about (i) the delivery and (ii) impact of goal setting interventions with stroke survivors who have these impairments. Future research (including that relating to G-AP) should include stroke survivors with cognitive and communication difficulties and consider the strategies, approaches or tools can be used to facilitate their optimal involvement in the process.

8.4 Implications for practice

The G-AP framework offers health professionals a theory and evidence based approach to collaborative goal setting practice. It makes explicit what the stages of a comprehensive goal setting process are and why they are important. Use of the framework broadens the scope of goal setting practice beyond what is typically reported in 'usual' practice and can be used to impact on outcomes at the patient, health professional and service level. The framework can be used to accommodate both the successes, and setbacks, that stroke survivors experience in their rehabilitation journey. Use of the G-AP framework should standardise goal setting practice within (and between) rehabilitation services and allow health professionals discuss the process using uniform terminology.

The papers and book chapter included in this thesis are available for health professionals to read and apply in their own clinical practice as they see fit. If practitioners would rather not fully adopt use of G-AP framework, they can use the G-AP framework to conduct a theory based review of their own current practice (Scobbie & Dixon, 2014, pg. 231). This may identify opportunities for incremental improvements to their practice (e.g. introducing use of action plans) that are easier to accommodate than total adoption of a new approach which may require multiple practice and service changes.

It is important to acknowledge the practice limitations of the G-AP framework. From the outset, G-AP has been described as a *framework* to *guide* goal setting practice.

Implementation of G-AP will be underpinned by individual health professional's clinical reasoning and practical rehabilitation skills on a patient by patient basis. For example, negotiating goals with patients who have cognitive or communication difficulties may involve skills that require additional expertise and training. Additionally, supporting patients who have experienced a set back or who have failed to meet a highly valued goal may require interpersonal and therapeutic skills that are not described within the G-AP framework. Use of the G-AP framework may however clarify for health professionals where their skill and knowledge gaps are and focus their continuing professional development in areas that will enhance their practice.

8.5 Conclusion

G-AP is the first practice framework which has been explicitly developed to guide health professionals through a theory based, patient centred, goal setting process in community based stroke rehabilitation settings. G-AP is designed for use by the whole multi-disciplinary team. It is well positioned for use in current and emerging community rehabilitation services across the UK. The next stage is to conduct a well-designed study to evaluate the effectiveness of G-AP when used in routine practice, across a range of community rehabilitation services, in different NHS and social care settings.

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Appendices

Appendix 1: Paper 1

Scobbie, L. Wyke, S., Dixon, D. *Identifying and applying psychological theory to setting and achieving rehabilitation goals*. Clinical Rehabilitation 2009; 23:231-333.

Appendix 2: Paper 2

Scobbie, L., Wyke, S., Dixon, D. *Goal setting and action planning in clinical rehabilitation: Development of a theoretically informed practice framework.* Clinical Rehabilitation 2011; 25(5) 468–482.

Appendix 3: Paper 3 (and additional files)

Scobbie, L., Wyke, S., Dixon, D. McLean, D., Duncan, E**.** *Implementing a framework for goal setting in community based stroke rehabilitation: a process evaluation.* BMC Health Services Research 2013, 13:190. (http://www.biomedcentral.com/1472-6963/13/190).

Appendix 4: Paper 4

Scobbie, L., Duncan, E. A., Brady, M. C., Wyke, S. *A UK wide survey of goal setting practice in community based stroke rehabilitation*. Disability and Rehabilitation 2014, Early Online: 1–8. (http://informahealthcare.com/doi/pdfplus/10.3109/09638288.2014.961652)

Appendix 5: Book Chapter

Scobbie, L.; Dixon, D. (2015) *A Theory-Based Approach to Goal Setting*. In Siegert, R.J. and Levack. W.M.M. (Eds), (pp. 213-235) *Rehabilitation Goal Setting: Theory, Practice and Evidence*. CRC Press; Taylor Francis. FL, US.

Appendix 6: Chief Scientists Office Final Report

Goal setting in community based stroke rehabilitation: *A feasibility and acceptability study of implementing a goal setting and action planning practice framework.* Lesley Scobbie; September 2014.

Appendix 7: Survey Participant Information Sheet

Appendix 8: Survey Questionnaire

Clinical Rehabilitation 2009; **23:** 321–333

Identifying and applying psychological theory to setting and achieving rehabilitation goals

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Background: Goal setting is considered to be a fundamental part of rehabilitation; however, theories of behaviour change relevant to goal-setting practice have not been comprehensively reviewed.
Objectives: (i) To identify and discuss specific theories of behaviour change relevant to goal-setting practice in the rehabilitation setting. (ii) To identify 'candidate' theories that that offer most potential to inform clinical practice.
Methods: The rehabilitation and self-management literature was systematically searched to identify review papers or empirical studies that proposed a specific theory of behaviour change relevant to setting and/or achieving goals in a clinical context. Data from included papers were extracted under the headings of: key constructs, clinical application and empirical support.
Results: Twenty-four papers were included in the review which proposed a total of five theories: (i) social cognitive theory, (ii) goal setting theory, (iii) health action process approach, (iv) proactive coping theory, and (v) the self-regulatory model of illness behaviour. The first three of these theories demonstrated most potential to inform clinical practice, on the basis of their capacity to inform interventions that resulted in improved patient outcomes.
Conclusions: Social cognitive theory, goal setting theory and the health action process approach are theories of behaviour change that can inform clinicians in the process of setting and achieving goals in the rehabilitation setting. Overlapping constructs within these theories have been identified, and can be applied in clinical practice through the development and evaluation of a goal-setting practice framework.

Introduction

Goal setting is viewed as an essential component of rehabilitation[1–7] and a core skill of rehabilitation practitioners.[3] However, there is no standard use of terminology in relation to goal setting – it has been described in the rehabilitation literature and clinical documentation in a variety of ways including: goal planning, care planning, setting aims/objectives and action planning. Neither is there an agreed terminology regarding goal setting's component parts.[5,8–11] Furthermore, there is no universally accepted definition of goal setting in the rehabilitation practice. The National Clinical Guidelines for Stroke[2] refer to goal setting

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as 'the identification of and agreement on a behavioural target which the patient, therapist or team will work towards over a specified period of time'. In this paper, our use of the term goal setting will be based on this definition as it acknowledges that in the rehabilitation practice, goal setting is a collaborative process that involves identifying behavioural goals, then working towards achieving them then over a specific period of time.

In spite of its inclusion in clinical guidelines[1,2] and assumed status as an important rehabilitation intervention, the practice of setting and achieving rehabilitation goals in the clinical setting is highly variable[2,5,6,8,12] and often problematic.[13–16] Clinicians can be faced with difficult issues such as: trying to set meaningful goals in a hospital environment, setting achievable goals for patients with unrealistically high expectations and trying to negotiate goals with patients who are not ready to accept the consequences of their health condition or who appear to lack motivation.[13] Helping patients translate general goals such as, 'I want to get back to normal' into specific goals that present an appropriate challenge in the here and now can be a difficult process.[15] In addition, there may be lack of agreement between clinicians and patients regarding what goals are most important and deciding what constitutes successful goal achievement.[17] Patients who have cognitive and/or communication deficits can be particularly difficult to engage in the goal-setting process in a collaborative way.[12,15,18–20]

The evidence base to support the clinical efficacy of goal setting in rehabilitation is not robust.[9–11,14] A recent, well-conducted, systematic review examined the effectiveness of setting goals in rehabilitation settings.[5] It concluded that while there is some evidence that setting goals can improve patient adherence to rehabilitation programmes, the evidence to support its impact on health-related outcomes was inconsistent. The authors noted that methodological limitations of many studies and lack of clarity about the purpose of goal-setting interventions being investigated made it difficult to draw firm conclusions about goal setting's effectiveness in rehabilitation.

Development of the evidence base is further hindered because goal-setting practice is largely a-theoretical, with a commonsense approach to implementation rather than practice based on a sound theoretical rationale.[4,21] Wade[21] asserted that, 'A theory or explanatory model is essential to analyse any situation, to decide on actions and to define the concepts and words used' (p. 812). The lack of a clearly articulated theoretical basis for goal setting is likely to contribute to the dilemmas experienced in clinical practice, and the lack of a robust evidence base to support it. It may also go some way to explaining why 'The goal setting process for many patients (and clinicians) is marked by frustration, difficulty and perceived failure'[14] (p. 1175).

In view of the identified gaps in both evidence and theory, and the clinical dilemmas experienced in rehabilitation practice, we believe that goal setting is an important complex intervention that should be developed and evaluated in a systematic way. Development of a theoretically informed goal-setting practice framework with clear key components and defined mechanisms of action should: (i) guide goal-setting interventions in a structured way, providing clinicians with a shared understanding of what to do, how to go about doing it and justify why they are doing it; (ii) use terminology and concepts that are understood by everyone involved; (iii) optimize patients' goal-related behaviour and rehabilitation outcomes; and (iv) facilitate the development of a cumulative evidence base focused on goal setting in the rehabilitation setting.

As a first step in development of a goal-setting practice framework, and in recognition of the importance of sound theoretical underpinning in the development and evaluation of complex interventions,[22] the purpose of this paper is to: (i) identify and discuss specific theories of behaviour change relevant to setting and achieving goals in the rehabilitation setting, (ii) identify 'candidate' theories that that offer most potential to inform clinical practice.

Methods

The literature was searched to identify review or empirical papers that proposed specific theories or models of behaviour change relevant to goal-setting practice in a clinical context. Because goal setting is an integral part of health-related

self-management interventions[23] (chapter 2), and the promotion of patient's self-management skills is seen as essential to rehabilitation practice,[2,24] our search included both the rehabilitation and health-related self-management literature. Appendix 1 details search strategies used, databases searched and the inclusion/exclusion criteria.

The titles, abstracts and, if necessary, the full text of retrieved papers were independently screened against the inclusion criteria by two reviewers (LS and SW). Where a discrepancy existed between reviewers, the full text paper was screened by a third reviewer (DD), followed by a discussion between the three reviewers until a clear consensus was reached. If necessary, the first author of the retrieved paper was contacted if it was still unclear if the paper met the inclusion criteria. To develop data extraction methods, two reviewers (LS and DD) independently extracted data on the first ten papers using four preliminary headings: key constructs, clinical application, target for intervention and empirical support. Data extracted from each paper was then compared and discussed by both reviewers. Following this, the heading 'target for intervention' was discarded as the information it contained duplicated that under the heading of 'clinical application'. The remainder of the data extraction (14 papers) was completed by one reviewer (LS) using the three agreed final headings.

Results

A total of 519 papers were retrieved from the search after removal of duplicates. Twenty-four papers met the inclusion criteria (see Table 1 for summary of retrieved papers). The majority of papers that did not meet the inclusion criteria fell into one of the following categories: (1) theory discussed was not a specific theory of behaviour change, (2) the link between the theory and how it related to the process of setting or achieving goals was not clear, (3) the paper was not a review paper or empirical study, or (4) goal setting was not discussed in a clinical context. On review of title and abstract, a discrepancy existed between reviewers (LS and SW) in 15 of the 519 retrieved papers (3.5%). Agreement was reached on 13 of these papers based on a full text review. For the two remaining papers, a full text review was conducted by a third reviewer (DD) which resulted in both of the queried papers being included.

Of the 24 papers that met the inclusion criteria, 22 were empirical studies and one paper (part i and ii) was a discussion and synthesis of empirical evidence. Three of the empirical studies specifically focused their investigation on the efficacy of the theory being proposed,[25–27] the remaining 19 empirical studies investigated the effectiveness of a theory-based goal-setting or action-planning intervention ($n = 8$), or a theory-based intervention that included goal setting or action planning as a core component ($n = 11$). Seventeen papers were set in a health-related self-management context, and seven in a rehabilitation context.

A total of five specific theories of behaviour change relevant to goal-setting practice were proposed: Social Cognitive Theory (specifically the self-efficacy component of this theory); Goal Setting Theory; Health Action Process Approach; Pro-active Coping Theory and the Self Regulatory Model of Illness Behaviour. Data extracted from the retrieved papers are summarized in the following section; information is organized by theory, in order of those most frequently proposed.

Social Cognitive Theory (Bandura)

Self-efficacy occupies a central role within Social Cognitive Theory[28] and was a key theoretical construct discussed in 13 of the retrieved papers.[25,29–40] For a review of this theory, see Bandura.[28]

Self-efficacy is about how confident an individual is in their ability to achieve a desired goal in the presence of perceived barriers or facilitators[28] (p. 3). Self-efficacy beliefs operate together with a person's outcome expectancies (i.e. what they believe the outcome of performing a particular goal directed behaviour will be)[41] (p. 306). Bandura argues that, 'unless people believe they can achieve desired effects by their actions, they will have little incentive to act'[28] (p. 2). Self-efficacy is theorized to exert its influence on health outcomes by improving motivation to set and pursue goals[42] and to increase resilience in the face of setbacks during goal pursuit.[26]

Table 1 Summary of retrieved papers

Paper	Theory	Study design	Clinical context	Intervention
(1) Dubbert and Wilson (1984)[36]	Social cognitive theory	Randomized trial	Self-management of obesity	Goal setting
(2) Hammond *et al.* (1999)[29]	Social cognitive theory	Crossover trial	Self-management of arthritis	Goal setting + other[a]
(3) Alderson *et al.* (1999)[40]	Social cognitive theory	Before-and-after pilot evaluation	Self-management of arthritis	Goal setting + other[a]
(4) Lorig *et al.* (1999)[32]	Social cognitive theory	RCT	Self-management of chronic conditions	Goal setting and action planning + other[a]
(5) Barlow *et al.* (2000)[38]	Social cognitive theory	RCT	Self-management of arthritis	Goal setting and action planning + other[a]
(6) Hammond and Freeman (2001)[30]	Social cognitive theory	RCT	Self-management of arthritis	Goal setting + other[a]
(7) Lorig *et al.* (2001)[39]	Social cognitive theory	Before-and-after cohort study	Self-management of chronic conditions	Goal setting and action planning + other[a]
(8) Lorig *et al.* (2001)[33]	Social cognitive theory	Longitudinal follow-up to RCT	Self-management of chronic conditions	Goal setting and action planning + other[a]
(9) Fu *et al.* (2003)[35]	Social cognitive theory	RCT	Self-management of chronic conditions	Goal setting and action planning + other[a]
(10) Lorig *et al.* (2003)[34]	Social cognitive theory	RCT	Self-management of chronic conditions	Goal setting and action planning + other[a]
(11) Stuifbergen *et al.* (2003)[37]	Social cognitive theory	RCT	Self-management of multiple sclerosis	Goal setting
(12) Gyurcsik *et al.* (2003)[25]	Social cognitive theory/goal setting theory	Longitudinal predictive study	Self-management of arthritis	Not an intervention study
(13) Marks *et al.* (2005a, 2005b)[31,42]	Social cognitive theory	Review and synthesis of evidence	Self-management of chronic conditions	Not an intervention study
(14) Gauggel *et al.* (2001)[46]	Goal setting theory	RCT	Brain injury rehabilitation	Goal setting
(15) Gauggel and Fischer (2001)[47]	Goal setting theory	RCT	Brain injury rehabilitation	Goal setting
(16) Gauggel *et al.* (2002)[44]	Goal setting theory	RCT	Brain injury rehabilitation	Goal setting
(17) Gauggel and Billino (2002)[45]	Goal setting theory	RCT	Brain injury rehabilitation	Goal setting
(18) Estabrooks *et al.* (2005)[43]	Goal setting theory	RCT (secondary analysis)	Self-management of diabetes	Goal setting and action planning
(19) Sniehotta *et al.* (2005)[27]	Health action process approach	Longitudinal predictive study	Cardiac rehabilitation	Not an intervention study
(20) Sniehotta *et al.* (2006)[61]	Health action process approach	Longitudinal RCT	Cardiac rehabilitation	Action planning and coping planning
(21) Schwarzer *et al.* (2008)[26]	Health action process approach	Longitudinal predictive study	Cardiac rehabilitation	Not an intervention study
(22) Schreurs *et al.* (2003)[51]	Proactive coping theory	Before-and-after process evaluation	Self-management of chronic conditions	Goal setting + other[a]
(23) Thoolen *et al.* (2008)[52]	Proactive coping theory	RCT	Self-management of diabetes	Goal setting and action planning + other[a]
(24) Theunissen *et al.* (2003)[54]	Self-regulatory model of illness behaviour	Cluster RCT	Self-management of hypertension	Action planning + other[a]

[a]Goal setting a core component of a multi-faceted intervention.
RCT, randomized controlled trial.

Social Cognitive Theory is the theoretical framework used by several chronic disease self-management programmes which were the focus of six papers.[32–35,38,39] Chronic disease self-management programmes are a group intervention for people who have a chronic condition.[31,42] Goal setting and action planning are key components of the intervention. Group participants formulate weekly action plans related to their personal self-management goals. Self-efficacy theory suggests that successful completion of the action plan(s) should enhance self-efficacy through mastery experience (success in a particular task or skill), with subsequent incremental improvement in self-management skills. Chronic disease self-management programmes focus on education, performance-related feedback, problem solving, modelling of self-management behaviours and social persuasion (encouragement from others) to further enhance self-efficacy and improve health outcomes.[31]

In their synthesis of evidence of self-efficacy enhancing interventions, Marks *et al.*[31,42] cited four randomized controlled trials,[32,34,35,38] a longitudinal follow-up study[33] and a before-and-after cohort study[39] examining the effectiveness chronic disease self-management programmes in a variety of contexts. All of the studies reported significant improvements post intervention in self-efficacy, health behaviours, health status and reduced health care utilization when compared to controls. Reduced health care utilization, reduced health distress and improved self-efficacy were maintained two years post intervention in the longitudinal follow-up.[33] While these results are very positive, all of these studies relied on volunteer subjects (arguably a highly motivated group), and self-reports of outcomes status. In addition, the unique contribution goal setting and action planning made to improved outcomes was not examined separately in any of the studies.

In addition to the chronic disease self-management programmes, the review identified six further studies in which social cognitive theory informed the development of interventions to promote: adherence to joint protection techniques[29,30] and aquatic exercise[25] in people with arthritis, attainment of personal goals in women with multiple sclerosis,[37] weight loss in obese people[36] and self-management of arthritis.[40] Goal setting was integral to all of the interventions. The interventions aiming to increase adherence resulted in significant improvements in use of joint protection techniques[29,30] and attendance at aquatic classes.[25] Although positive increases in goal attainment were reported in women with multiple sclerosis[37] and improved weight loss in the obese group,[36] methodological limitations of the former study and lack of adherence to the intervention in the latter do not allow firm conclusions to be drawn about the effectiveness of the intervention. Improvements in self-efficacy, pain and disability were reported in the arthritis self-management intervention.[40] Interestingly, this intervention was delivered by a multidisciplinary team, however it was a before-and-after study with no control group or separate analysis of the goal-setting component of the intervention.

Goal setting theory (Locke and Latham)

Goal Setting Theory was used to inform interventions in five of the retrieved papers,[43–47] and was evaluated from a theoretical perspective on one paper.[25] For a review of this theory see Locke and Latham.[48]

According to Goal Setting Theory, goal 'specificity' and 'difficulty' are the two primary goal attributes that will influence goal-related performance. Goals should be proximal and specific as opposed to vague 'do your best' type goals, and should be difficult enough to challenge the person without taking them beyond the limits of their ability.[48] Goals may be assigned rather than self-set, as long as the purpose and rationale for the goal is given to foster goal commitment.[48] The theory suggests that goals exert their influence by directing attention and effort, maximizing persistence and fostering problem solving in relation to the set goal.[48] Goal effects are moderated by a number of factors including goal commitment, self-efficacy, task complexity and performance feedback.[48]

The constructs of Goal Setting Theory were examined by Gyurcsik *et al.*[25] in a longitudinal predictive study. This study tested the hypothesis that specific, difficult goals would be independent predictors of attendance at an aquatic exercise class in a group of people with arthritis. Results of the

study partially supported the hypothesis. Goal specificity was a significant predictor of attendance at the class – as the setting of specific goals increased (e.g. 'I will attend three times per week'), so did the attendance at the class. In contrast to the study hypothesis, goal difficulty was negatively correlated with attendance. The authors suggested that in this population, the effects of goal difficulty may be moderated by self-efficacy; and that where self-efficacy is low, setting easy goals should be encouraged to promote exercise adherence. Although the study hypothesis was not upheld, the findings were in fact congruent with goal setting theory, which acknowledges the moderating effects of self-efficacy on outcomes.

Goal Setting Theory was used to inform a range of goal-setting interventions that focused on setting specific goals. In a before-and-after computer-based self-management intervention, Estabrooks *et al.*[43] examined the effect of setting specific goals in a diabetic population. Results demonstrated that setting specific goals led to an increase in the desired goal-related behaviour (e.g. increased physical activity). Further evidence to support use of setting specific goals was provided in a series of randomized controlled trials looking at the effects of a goal-setting intervention on a brain-damaged population.[44–47] Gauggel and colleagues demonstrated that setting specific goals led to better performance than easy or 'do your best' goals, and that performance-related feedback enhanced performance. Theses studies demonstrated the effectiveness of a goal-setting intervention that focused on setting specific goals and giving feedback, in a population that may normally be excluded on the basis of cognitive impairment. On a cautionary note, however, the goals set in these studies were in relation to simple tasks such as a pegboard activity, in a laboratory type environment. It is not clear if the same results could be achieved using personally relevant rehabilitation goals in real life contexts.

Health action process approach (Schwarzer)

The Health Action Process Approach was proposed in three of the retrieved papers.[26,27,49] For a review of this theory, see Schwarzer[50] (pp. 217–238).

The Health Action Process Approach suggests that behaviour change takes place in two distinct phases. The first phase is a motivational or decision-making phase where goal intentions develop. Risk perception ('I am at risk of loosing the ability to climb the stairs'), outcome expectancies ('If I practise climbing stairs every day, my legs will get stronger') and action self-efficacy ('I'm confident I can do this if I use the stair rail for support'), are the key constructs relevant to this stage. The second volitional phase occurs when specific plans are put in place which act to bridge the gap between goal intentions and actions.[26] Planning is crucial to this stage and can be broken down into two subconstructs: action planning which specifies where, when and how to act; and coping planning which encourages the person to think about barriers that may get in the way of carrying out the action plan, and proactively think about strategies to overcome them.[49] Recovery self-efficacy is important in the volitional phase and will influence how the person recovers in the face of setbacks.[26]

The theoretical constructs of Health Action Process Approach were examined in two empirical papers set in a rehabilitation context.[26,27] In a longitudinal study of cardiac rehabilitation patients,[27] intention formation, action planning and coping planning were positively correlated with exercise during the rehabilitation period, and at two and four months after discharge. Intentions decreased and coping planning increased over time. These data are consistent with the Health Action Process Approach model which indicates that intentions are important at the stages of goal formation, and that coping planning becomes important at a later stage when people have had a chance to experience the barriers that arise during attempts to carry out action plans.

Schwarzer *et al.*[26] reported results of three longitudinal studies to examine the validity of the Health Action Process Approach model in relation to physical exercise adherence in rehabilitation settings. Action planning and recovery self-efficacy were specified as proximal predictors of adherence to physical exercise in rehabilitation. This hypothesis was supported in all three studies. It was notable that risk perception was not significantly related to any of the variables under study.

The authors conclude that clinicians should focus on improving patients' action self-efficacy and outcome expectancies in relation to rehabilitation goals, and planning and recovery self-efficacy to help patients translate their goals into action, and to maintain goal-related behaviour change.

A planning intervention designed to promote exercise during cardiac rehabilitation was examined in a longitudinal randomized controlled trial.[49] Those patients who received the action planning and coping planning intervention reported significantly higher levels of exercise following discharge from rehabilitation compared with patients who received either action planning alone or routine care. Coping planning was especially important in the later stages of rehabilitation, when the patient was at home and had experience of the barriers challenging goal achievement. Unfortunately, no health outcomes were measured in this study, so it is not known whether improvements in exercise levels translated into changes in health status. However, it demonstrates the effectiveness of a action planning and coping planning in relation to achieving the goal of promoting exercise in a cardiac rehabilitation population.

Proactive coping theory (Aspinwall and Taylor)

Pro-active Coping Theory was proposed in two of the retrieved papers.[51,52] For a review of this theory, see Aspinwall and Taylor.[53]

In the same vein as the health action process approach model, Pro-active Coping Theory argues that people can anticipate and plan responses to threats likely to hinder goal achievement. In two similar studies, Schreurs *et al.*[51] and Thoolen *et al.*[52] tested a group-based intervention designed to enhance of self-care behaviours in patients with asthma, heart failure and/or diabetes. Sessions included: goal setting, barrier identification, action planning, feedback and the use of homework. In both studies, participants highly valued the process of setting goals and proactive coping planning and were very positive regarding the value of peer support and learning from others within the group. Significant improvements in proactive coping, goal attainment and self-efficacy were evident in the intervention group on completion of the course; however health-related outcomes were not measured.

There are clear similarities between the coping planning construct within the Health Action Process Approach and Pro-active Coping Theory; in addition, the proactive coping interventions did not differ significantly from the chronic disease self-management interventions based on self-efficacy. Therefore, on the basis of these papers, interventions based on proactive coping theory may not provide added value over interventions based on Social Cognitive Theory or the Health Action Process Approach. However, these papers did highlight important aspects of process and content evaluation of an intervention that included goal setting and action planning as a core component. This is crucial when examining the feasibility of complex interventions and preparing the intervention for trial evaluation.

Self-regulatory model of illness behaviour (Leventhal)

This Self Regulatory Model of Illness Behaviour was used to inform an intervention in one of the retrieved papers.[54] For a review of the model, see Myers.[55]

The Self Regulatory Model of Illness Behaviour (also referred to as the common sense model of self-regulation) has three main constructs: (i) illness representations and emotional reactions, (ii) coping response (action planning), and (iii) appraisal. Illness representations reflect the person's beliefs about what the problem is, how serious it is, what caused it, how confident the person is that the illness can be controlled, how long it is likely to last and how it might be cured.[54] Illness representations, in combination with the person's emotional response to the health threat, will influence coping responses and action plans, and their appraisal of outcomes. This model is interactive, with all three stages potentially influencing each other.

Theunissen *et al.* conducted a randomized controlled trial of two interventions designed to influence patient illness representations and action plans with a view to achieving the goal of increased adherence to hypertensive medication.[54] One group of patients focused on discussing and influencing illness representations that may hinder

adherence to medication, while the second group focused on creating action plans to foster adherence. The control condition was a 'care as usual' consultation. Results indicated that the goal of increasing adherence levels was not determined by any of the interventions, but by pre-study adherence levels.

Discussion

Our review of the literature identified five theories of behaviour change relevant to setting and achieving goals in the rehabilitation setting: Social Cognitive Theory (specifically the self-efficacy component of this theory); Goal Setting Theory; Health Action Process Approach; Pro-active Coping Theory and the Self Regulatory Model of Illness Behaviour. The question is, which of these (if any) could usefully inform clinical practice, and the development of a goal-setting practice framework?

All of the proposed theories included key constructs that were clinically relevant. Clinicians will recognize that confidence or self-efficacy, making plans, receiving feedback and trying to keep goals specific are all likely to impact on how patients engage in the goal-setting process; however, they are unlikely to have been considered or applied in a structured or standard way during goal-setting practice across different settings. The interventions described in the summarized papers demonstrate how these theories can be operationalized in practical ways in rehabilitation and health-related self-management contexts; however, it is significant that only one of the interventions identified in our review was implemented by a standard multidisciplinary team and incorporated within their routine rehabilitation practice.[40] This is an important consideration as our vision of a goal-setting practice framework is that it would be used by a range of clinicians, within existing rehabilitation teams, for a mixed group of patients receiving rehabilitation services. This underlines the importance of developing a practice framework in collaboration with rehabilitation practitioners, and assessing its feasibility and acceptability in real life settings to optimize implementation.

It was interesting to note that a range of strategies and materials were used to support the interventions such as patient workbooks, telephone follow-up or specialized computer programs. There were training implications for delivery of all of the interventions, and often a manual and ongoing supervision was used to augment the training. These are important factors to consider when thinking about how implementation of the framework could be standardized to an optimum level in the clinical setting.

Interventions underpinned by Social Cognitive Theory (specifically, the self-efficacy component of this theory) have been evaluated extensively at the level of randomized controlled trial, and have resulted in improved health care outcomes for a range of people with chronic conditions; however, these interventions tend to be multifaceted, and the unique contribution goal setting and action planning has on outcomes has not been examined.

Goal-setting interventions based on Goal Setting Theory have also been tested within randomized controlled trials, with positive results underlining the importance of setting specific goals and providing feedback. The goal-setting interventions tested were somewhat simplistic when compared to the complexity of goal setting in routine clinical practice; however, the principle that setting specific goals and providing feedback is likely to enhance performance has important clinical implications.

The theoretical constructs of the Health Action Process Approach were tested and supported in two well-conducted studies. An intervention based on this approach, which included action planning and/or coping planning, led to significant improvements in health behaviours when tested in a randomized controlled trial. There is evidence, therefore, to support the value of action planning and coping planning in relation to bridging the goal intention–behaviour gap.

Interventions based on Pro-active Coping Theory were supported by empirical evidence; however, these interventions did not appear to differ significantly or have any added value over interventions based on Social Cognitive Theory or the Health Action Process Approach.

Finally, the intervention based on the self-regulatory model of illness behaviour did not have favourable results on goal outcomes; however, this model does acknowledge the importance of emotions and illness representations in relation

to behaviour change, an important consideration in the clinical setting.

So, on the basis of key constructs, clinical utility and empirical evidence the self-efficacy component of Social Cognitive Theory, Goal Setting Theory and the Health Action Process Approach are the strongest candidates to inform clinical practice and the next stage of development of a goal-setting practice framework. It has been suggested that it is appropriate to consider integrating models and theories across common constructs,[56] so a practical way forward could be to consider commonalities between candidate theories. This idea has been employed in the development of frameworks to guide interventions such as enhancing the implementation of evidence-based practice by health care professionals[57] and improving health behaviours of people who are interested in making positive lifestyle changes.[58]

This review of the key constructs within each candidate theory revealed clear overlapping constructs, namely: self-efficacy (Social Cognitive Theory, Health Action Process Approach, Goal Setting Theory); outcome expectancies (Health Action Process Approach, Social Cognitive Theory); goal attributes (Goal Setting Theory, Social Cognitive Theory); planning (Health Action Process Approach), and goal-related appraisal and feedback (Goal Setting Theory, Social Cognition Theory).

The Health Action Process Approach makes a useful distinction between the motivational phase of behaviour change, where the intention to act (or achieve a goal) develops, and the volitional phase in which the details of action are planned and the goal is pursued. Key constructs of each of the theories informs one or both of these phases in a practically useful way (Figure 1). Action self-efficacy and outcome expectancies are likely to be influential as patients do, or don't, develop goal intentions; as such, consideration of these constructs may help clinicians when negotiating rehabilitation goals and dealing with dilemmas such as goal setting with patients who are having difficulty identifying goals or who appear to lack motivation. Consideration of goal attributes can inform the clinician about how goals should be framed to optimize their effectiveness. Finally, action planning, coping planning, enhancing recovery self-efficacy and providing performance-related feedback should act to bridge the intention–behaviour gap by activating and sustaining goal-directed behaviour. This could help address dilemmas such as translating general goals into specific goals and action plans, collaboratively deciding what constitutes successful goal achievement and increasing adherence to goal-related behaviour. Ultimately, it is hoped that optimizing goal-related behaviour would have a positive impact on rehabilitation outcomes.

The common constructs of the candidate theories of behaviour change identified from our review have a clear application to setting and achieving goals in clinical practice; however, their

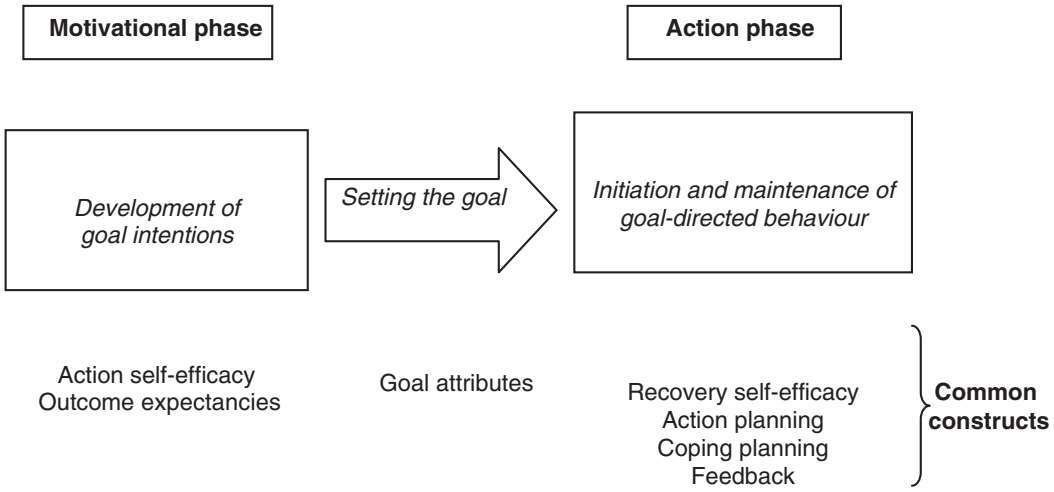

Figure 1 Theoretical constructs applied to the motivational and action phases of goal behaviour.

limitations should be acknowledged. Theories of behaviour change construct social factors in terms of people's beliefs, rather than influencing recovery and rehabilitation in their own right (ref.[59], p. 399). In clinical practice, goal setting should be embedded within in real life contexts.[60] Contextual factors such as social support, economic resources, availability of equipment, physical aspects of the home environment and clinical priorities can act as barriers or facilitators to goal attainment. It is important that these are identified, and factored into the goal-setting process at every level so that goals are meaningful, barriers are minimized and resources utilized to their full potential.

The need to develop a theoretical underpinning to goal-setting interventions in the rehabilitation setting has been a recurring theme in the literature. We are attempting to meet this challenge head on. To date, we are not aware of any other review of this nature that has attempted to identify theories of behaviour change relevant to the process of setting and achieving rehabilitation goals. However, there are limitations of this review that should be acknowledged.

Our search strategy was very specific (the three domains of theory, goal setting and clinical context had to be dominant themes within each paper to meet the inclusion criteria), and our choice of search terms not exhaustive. We did increase the sensitivity of the Cochrane database search by extending the 'theory' search strand into the full text of the paper, rather than just the title or abstract, however, there will be empirical papers excluded from this review that discuss goal-setting interventions in a clinical setting but do not make explicit links to a specific theory of behaviour change. By focusing on a theoretical perspective, we hope to develop a practice framework that can be understood in terms of what its core components are, and how and why they work. The reasons for this are twofold. First, it can then be used by clinicians across different practice settings to inform goal-setting interventions in a standard way with individual patients, rather than offering a prescriptive, rigid intervention. Second, it creates an opportunity for empirical evaluation of the effectiveness of the framework.

A further limitation to our review is that in the papers which examined the effectiveness of an intervention, although all interventions were theoretically underpinned, the theoretical 'fit' between the theory and intervention described was variable. The decision as to whether the paper met the inclusion criteria was therefore open to a degree of subjectivity. In addition, not all of the included papers examined the unique contribution goal setting or action planning made to outcomes, most notably in the chronic disease self-management interventions. It is difficult then to be clear about the standalone effect of setting goals and/or creating action plans on outcomes, or to think in a linear way about the connection between theory and goal-setting practice and clinical outcomes. In spite of these limitations, we believe this work creates an important foundation for the development of a goal-setting practice framework.

Conclusion

This review has identified five theories of behaviour change relevant to the process of setting and achieving goals in the rehabilitation setting. It has been proposed that three of these theories: Social Cognitive Theory, Goal Setting Theory and the Health Action Process Approach, offer most potential to inform clinical practice on the basis of their clinical utility and empirical support. Overlapping constructs within the theories have been identified: self-efficacy; outcome expectancies; goal attributes; action planning; coping planning and goal-related appraisal and feedback. These constructs can be used and applied in clinical practice through the development and evaluation of a goal-setting practice framework. The importance of integrating relevant social and environmental factors into the framework has been emphasized.

Clinical messages

- Social Cognitive Theory, Goal Setting Theory and the Health Action Process Approach are theories of behaviour change that can help clinicians understand and influence goal related behaviour.
- These theories contain overlapping constructs that can inform goal-setting practice in the rehabilitation setting.

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Appendix 1 – Search strategy; data bases searched and inclusion/exclusion criteria

Search strategy

Rehabilitation strand

1. rehabilitation.mp.
2. *REHABILITATION/
3. goal setting.mp. or *Goal-Setting/
4. goal planning.mp.
5. action planning.mp.
6. objectives.mp. or *'Goals and Objectives'/
7. theoretical.mp. or *MODELS, THEORETICAL/
8. theory.mp. or *THEORY/
9. model.mp.
10. 3 or 4 or 5 or 6
11. 7 or 8 or 9
12. 2 and 10 and 11

Self-management strand

1. goal setting.mp. or Goal-Setting/
2. goal planning.mp.
3. action plan$.mp.
4. objectives.mp. or *Goals and Objectives'/
5. theoretical.mp. or *MODELS, THEORETICAL/
6. theory.mp. or *THEORY/
7. model.mp.
8. self management.mp. or *Self Care/
9. chronic disease management.mp.
10. 1 or 2 or 3 or 4
11. 5 or 6 or 7
12. 8 or 9
13. 10 and 11 and 12

Databases searched

CINAHL (1985–August 2008); EMBASE (1980–August 2008); AMED (1985–August 2008); MEDLINE (1950–August 2008); ASSIA (1969–August 2008); PsychINFO (1985–August 2008); Cochrane database of controlled trials (August 2008). The reference lists of retrieved 'review' articles were checked for papers that met the inclusion criteria.

Inclusion and exclusion criteria

Inclusion: (i) review paper or empirical study, (ii) proposed a specific theory or model of behaviour change relevant to the process of setting and/or achieving goals in a clinical context (rehabilitation or health-related self-management setting), (iii) published in a peer-reviewed journal, and (iv) written in the English language.

Exclusion: papers were excluded if all four criteria were not met.

Goal-setting and action planning in the rehabilitation setting: development of a theoretically informed practice framework

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Goal setting and action planning in the rehabilitation setting: development of a theoretically informed practice framework

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Background: Setting and achieving goals is fundamental to rehabilitation practice but has been criticized for being a-theoretical and the key components of replicable goal-setting interventions are not well established.
Purpose: To describe the development of a theory-based goal setting practice framework for use in rehabilitation settings and to detail its component parts.
Methods: Causal modelling was used to map theories of behaviour change onto the process of setting and achieving rehabilitation goals, and to suggest the mechanisms through which patient outcomes are likely to be affected. A multidisciplinary task group developed the causal model into a practice framework for use in rehabilitation settings through iterative discussion and implementation with six patients.
Results: Four components of a goal-setting and action-planning practice framework were identified: (i) goal negotiation, (ii) goal identification, (iii) planning, and (iv) appraisal and feedback. The variables hypothesized to effect change in patient outcomes were self-efficacy and action plan attainment.
Conclusions: A theory-based goal setting practice framework for use in rehabilitation settings is described. The framework requires further development and systematic evaluation in a range of rehabilitation settings.

Introduction

Setting and achieving goals is a fundamental component of any rehabilitation programme and is recommended in clinical guidelines.[1–7] Its acceptance, however, may be based on its commonsense appeal rather than on a strong theoretical grounding or evidence to support its impact on health outcomes.[4,8] Clinicians frequently experience difficulties in day-to-day goal-setting practice and can become weighed down by the understated complexity of the process.[9–13]

Any attempt to guide clinicians in a systematic way through the goal-setting process, or to evaluate the impact of goal setting on patient outcomes, requires clearly described theory-based interventions which can be replicated in a variety of clinical settings.[3,4,14–16]

There are theory-based interventions that include goal setting as a key component, particularly in the context of support for self-management.

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For example, Lorig's chronic disease self-management programmes are evidence-based group interventions based on self-efficacy theory which includes goal setting and action planning.[17–19] There is a manual which guides group leaders and participants through the process of setting goals and action plans; however, these are standalone programmes and are not designed to be implemented in rehabilitation settings by multidisciplinary teams with patients on a one-to-one level.

Two goal-setting interventions based on self-regulation theory have been described and piloted in the context of brain injury – identity-orientated goal training and goal management training.[20] While the authors reported both approaches to be acceptable to patents, they were time intensive and at times difficult for practitioners to utilize. Both interventions were tailored to a traumatic brain injury population and arguably not suitable for use in the general rehabilitation setting.

Jones *et al*. and Johnston *et al*. have both developed theory-based workbook interventions for people recovering from stroke which also include setting goals as a key component; but neither intervention has been primarily designed as a framework to guide clinicians through the goal-setting process in a generic rehabilitation setting.[21,22]

Finally, Goal Attainment Scaling and the Canadian Occupational Performance Measure are outcome measures frequently used in rehabilitation which measure outcomes on the basis of goals set.[23,24] While goal setting is integral to the use of these measures, the focus of their development has been on their clinical value as an outcome measure rather than a practice framework to guide clinicians through the process. In addition, the Canadian Occupational Performance measure has been designed for use for by occupational therapists rather than the whole multidisciplinary team.

So, it is our view that rehabilitation therapists are in a predicament; they are expected to set and achieve goals with their patients but have no structured practice framework to guide how they should go about it, and no clear theoretical framework to explain why it should be done in a specific way. In particular, it is difficult for therapists to be sure about what difference goal setting actually makes to patients' outcomes or their experience of the rehabilitation process. The purpose of this paper is to address this predicament by describing the development of a theory-based goal-setting practice framework for use in rehabilitation settings, and to detail its component parts.

As the aim of goal setting is a change in patient behaviour (e.g. learning to walk using an assistive device or practising exercises to improve upper limb function) theories of behaviour and behaviour change have the potential to guide the development of goal-setting interventions.[3,15,25] Our recent review identified three theories of behaviour change with empirical support of their usefulness to inform interventions that include goal setting[16]:

- Social Cognitive Theory – specifically the self-efficacy component (Bandura)[26];
- Goal Setting Theory (Latham and Locke)[27];
- Health Action Process Approach (Schwarzer).[28]

These theories contain seven theoretical constructs that we argued could usefully inform the development of a practice framework:

1) *self-efficacy* (confidence in the ability to achieve a desired goal);
2) *outcome expectancies* (beliefs about what the outcome of performing a particular goal-directed behaviour will be);
3) *goal attributes* (important characteristics of the goal, such as goal specificity and difficulty);
4) *action planning* (specific plans that describe how the goal will be achieved);
5) *coping planning* (plans that describe how potential barriers will be overcome);
6) *appraisal* (assessment of performance in carrying out the plan and progress in relation to the goal)
7) *feedback* (feedback about performance in carrying out the plan and progress in relation to the goal).[16]

The theories and theoretical constructs, including their expected influence on behaviour change are summarized in Table 1.

Table 1 Theoretical constructs and how they are expected to work

Theory	Theoretical constructs shown to influence behaviour	How they are expected to influence behaviour change
SCT HAPA	Self-efficacy	• motivate goal-related intentions and behaviour
SCT HAPA	Outcome expectancies	• encourage striving to achieve more difficult goals • increase resilience in the face of setbacks
SCT GST	Goal attributes (e.g. difficult/specificity)	• maximize persistence and effort during goal pursuit • direct attention towards goal relevant activities • encourage use of strategies relevant to goal attainment
HAPA	Action planning and Coping planning	• promote translation of goal intentions into goal-related behaviour
SCT GST	Appraisal and Feedback	• reveals progress in relation to goals • enhances goal-related performance • motivates adjustments to goal-related behaviour

GST Goal Setting Theory; HAPA Health Action Process Approach; SCT Social Cognition Theory.

However, theoretical constructs alone are of little practical value; what is required is a process that enables them to be developed into a coherent framework that can inform clinical practice in an effective way. The Medical Research Council's (MRC's) guidelines for the development and evaluation of complex interventions argue that it is important to understand how an intervention is likely to work and that theory has an important role.[29] They recommend Hardeman *et al.*'s causal modelling approach as one way of linking theory to health outcomes in complex interventions that are designed to promote behaviour change.[30]

A causal model can be thought of as a hypothetical process through which theory is used to identify what determines or drives behaviour, target behaviours that are required to change and the likely impact of behaviour change on health outcomes.

The causal model also predicts from a theoretical perspective the variables that are expected to mediate the relationship between the goal-related behaviour and health outcomes – in other words, if people engage in the goal-related behaviour, e.g. practising climbing stairs, how will that influence health outcomes, e.g. improved activity levels?

The approach is useful for developing a practice framework because it helps identify the points during the goal-setting process where clinicians can intervene with specific techniques to influence behaviour change, and the health outcomes that are likely to be influenced. Figure 1 summarizes the key elements of a causal model applied to goal-setting practice in rehabilitation.

In describing the development of a goal-setting practice framework, this paper first describes the mapping of theory onto a specific goal-setting causal model, and second the development of the causal model into a goal-setting framework that can actually guide clinical practice in the rehabilitation setting.

Methods

Development of a causal model of goal setting within rehabilitation

Our recent review identified seven theoretical constructs shown to influence the initiation and maintenance of goal-related behaviour (see Table 1). Target behaviours for change and expected health outcomes were identified using the World Health Organization International Classification of Functioning, Disability and Health (ICF) which provides a taxonomy of outcomes relevant to rehabilitation.[31]

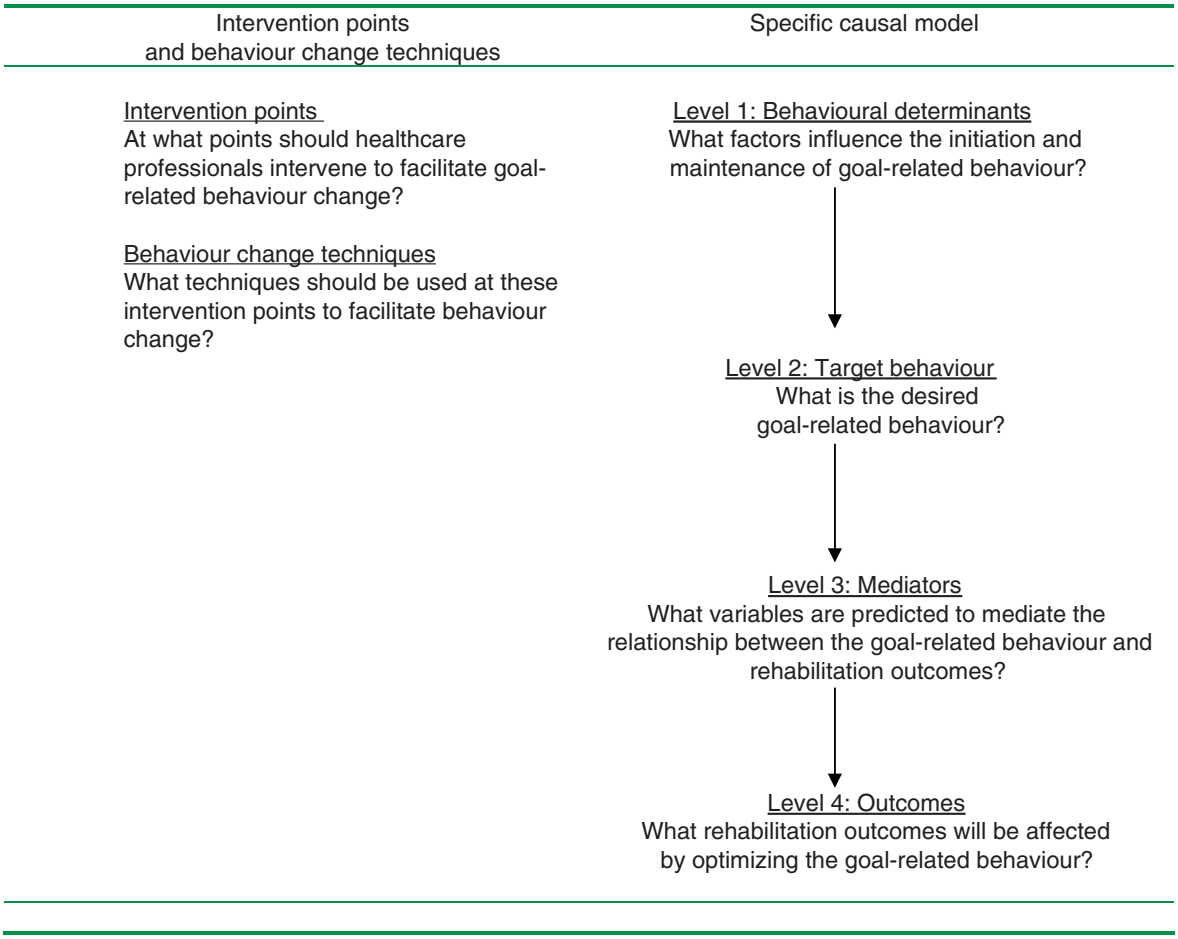

Figure 1 Causal model applied to goal-setting practice.

The ICF identifies three health outcome domains each of which can be expressed as behaviour – impairments (problems in body function or structure, e.g. problems with gripping or arm movement), activity limitations (problems in execution of a task or action by an individual, e.g. climbing stairs) and participation restrictions (problems with involvement in life situations, e.g. going out with friends).

Using a process of discussion to consensus, two authors (LS and DD) worked together to order the seven behavioural determinants into an initial causal model and to identify target behaviours and health outcomes relevant to rehabilitation. The third author (SW) then independently reviewed this initial model. All three authors then met to identify any discrepancies, which were resolved through a process of discussion until a consensus was reached that the model was plausible.

Development of the causal model into a practice framework

Although plausible to researchers, the causal model was of limited practical use to rehabilitation practitioners. One of the authors (LS) is a practising occupational therapist in a community rehabilitation team in NHS Forth Valley (ReACH Team). Task groups are routinely set up within the ReACH Team to complete service

development initiatives in a robust and clinically relevant way. The team readily agreed to work to translate the causal model into a practice framework that they felt was useable.

The team set up a task group that consisted of two occupational therapists, two speech and language therapists, two physiotherapists, a clinical psychologist, a nurse and a generic rehabilitation assistant. The group was led by (LS) who took detailed notes of each meeting and distributed them to all task group members for review and verification. The task group met monthly for two-hour sessions, over a 10-month period.

The group explored how each element of the causal model could be applied in clinical practice, this was helped by developing a goal-setting folder in which goals and action plans could be written down for patients and their family members to refer to. The folder provided space for feedback to be summarized, and included a 'patient friendly' diagram of the goal-setting and action-planning framework.

The model and paperwork were iteratively applied to a convenience sample of six patients currently receiving rehabilitation services from the community rehabilitation team. Four patients had a diagnosis of stroke, one of whom had communication difficulties. The fifth patient had motor neuron disease and the sixth suffered from multiple sclerosis. Ages ranged from 20 to 64 years. Two of the patients were male, all six were married or had a partner, three of which were closely involved with the rehabilitation process. All patients required multidisciplinary input.

The task-group discussed each patient in turn and reported on:

- perceptions of the clinical usefulness of each of the four intervention points and related behaviour change techniques specified in the causal model;
- the feasibility of implementing the components of the causal model (including factors that facilitated/ hindered the process) and whether implementation of the causal model was acceptable to patients and their carers.

These discussions resulted in refinement of the causal model, development of guidelines for its implementation in the form of a practice framework and further development of the goal-setting folder.

Results

Development of a causal model of goal setting within rehabilitation

Figure 2 details the components of the four levels of the goal setting causal model identified during the process of development. No disagreements occurred in relation to the components to be included in levels 1, 2 or 4; however, identification of variables thought to have a mediating effect on outcomes (level 3) did require extended discussion before consensus was reached between the two researchers (DD, LS). Once this consensus was achieved there were no further disagreements over the model from the third independent reviewer of the model (SW). Figure 2 also identifies intervention points potentially available to therapists and behaviour change techniques relevant to each.

Level 1 – Behavioural determinants: contains four components: self-efficacy, outcome expectancy, behavioural goals and pro-active planning. The promotion of increased self-efficacy and positive outcome expectancies is expected to influence the development and specification of a goal intention. This goal intention can then be developed into a specific behavioural goal, and the two components of proactive planning (action and coping planning) used to promote the translation of intention into action. Action plans describe how the behavioural goal will be achieved and coping plans identify potential barriers to its achievement and strategies to overcome them.

Level 2 – Target behaviour: the research team agreed that the behaviours being targeted for change in rehabilitation are likely to vary considerably between patients and, as a consequence, could not be specified within the model. Rather the ICF should be used to identify target behaviours relevant to a particular patient at the level of impairment and/or activity and/or participation.

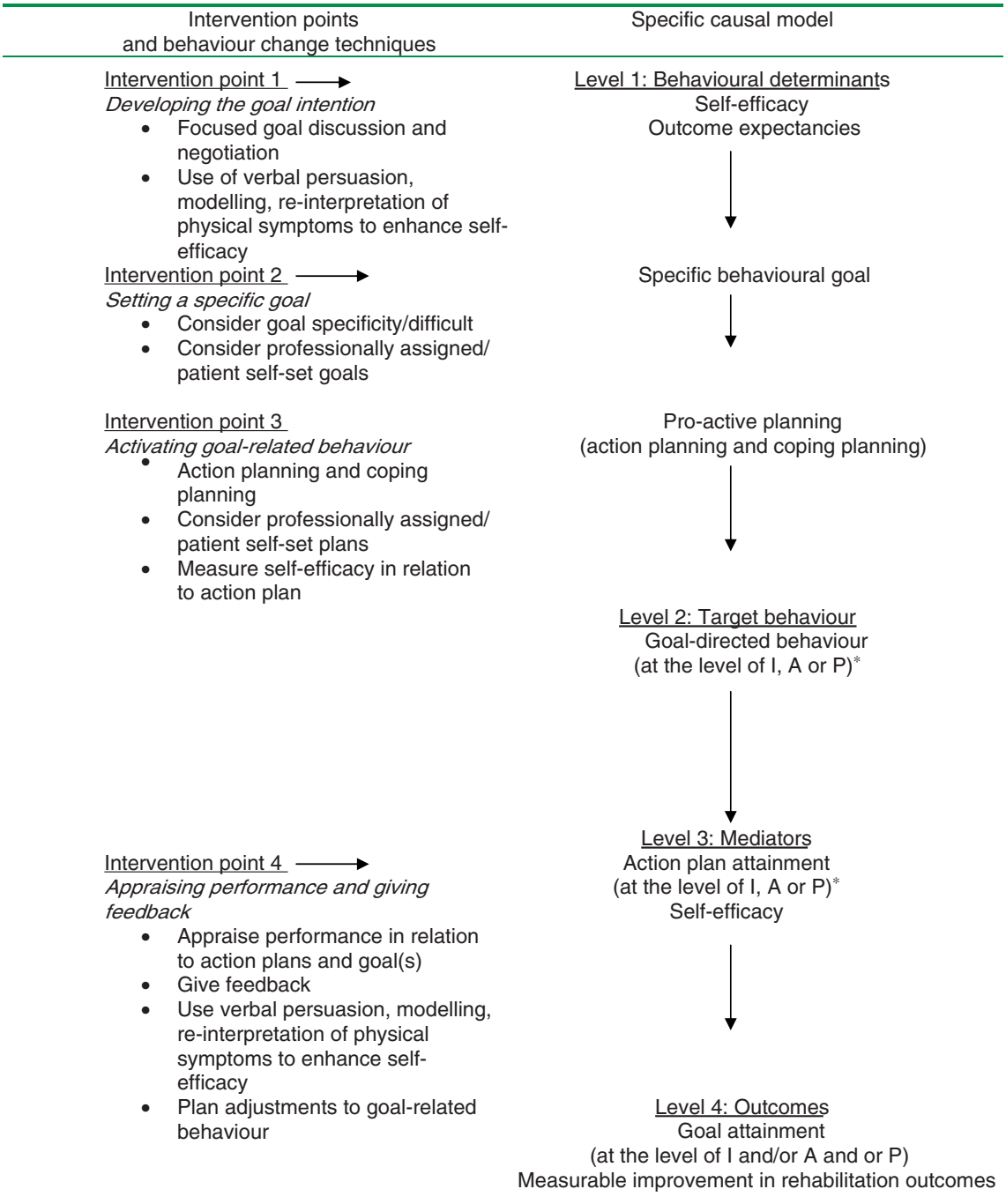

Figure 2 Goal-setting causal model with intervention points and behaviour change techniques.

Level 3 – Mediators: successful and repeated performance of the target behaviours should result in improved health outcomes through one or both of the following mediators: (i) action plan attainment resulting in incremental improvements in functioning at the level of impairment or activity or participation as defined by the ICF, and/or (ii) enhanced self-efficacy.

For example, consider a person recovering from stroke with dysarthria who has difficulty being understood during conversations. One target behaviour, i.e. action plan, may be to practice orofacial and breathing exercises daily. Repeated success in carrying out this behaviour will result in improved orofacial movement and breath control (body function) and improved ability to articulate words (activity) during speech. The experience of successfully carrying out the action plan should enhance the person's self-efficacy in relation to their speech and motivate continued practice of the ongoing target behaviours. The cumulative effect of ongoing successful action plan attainment and self-efficacy enhancement would result in goal attainment and a subsequent improvement in rehabilitation outcomes, in this case to be able to hold a conversation with a friend – an improved participation outcome.

Level 4 – Health outcomes: as goals are achieved, there would be a measurable improvement in the person's functioning at the level of impairment and/or activity and/or participation. For example, relevant outcomes might be improved pain control (reduction in impairment); improved walking speed (reduced activity limitations) or success in returning to work (reduced participation restrictions).

Intervention points and behaviour change techniques

We identified four intervention points and specific behaviour change techniques for use at each point. To demonstrate how the casual model and intervention points can be used in practice (when applied within the framework) we have illustrated the model using a case study from one of the six patients discussed by the group.

Intervention point 1: Developing goal intentions

First, patients are encouraged to appraise their current situation and identify the main problems they want to address. Motivation to address the identified problem is then developed through techniques that increase self-efficacy and promote positive outcome expectancies.

Self-efficacy can be increased by:

- fostering and focusing on goals likely to result in success (mastery experiences);
- encouraging patients' about their capability of achieving goals (verbal persuasion);
- raising awareness that people with similar problems have succeeded in meeting similar goals by sustained efforts (modelling);
- correcting misconceptions about physical states that may deter the patient from pursuing a particular goal, e.g. explaining that some breathlessness during exercise is to be expected (re-interpretation of symptoms).

Case study: Rosie is a 52-year-old woman who had a stroke eight weeks ago resulting in a mild hemiparesis of her right side (she is right-hand dominant). She lives with her husband who works full time. She has a small dog that she enjoys taking out for walks. Rosie was responsible for cooking and household chores prior to the stroke.

Rosie has discussed the problems she has been experiencing since the stroke with her therapy team (occupational therapist and physiotherapist) and has identified the things she would like to focus on, one of which is to take her dog out for a walk ***(goal intention)****. Rosie believes that if she can do this, the dog will get daily exercise and she won't be 'stuck' in the house all day* ***(outcome expectancies)****. She isn't sure if she can manage this activity as her right leg tires quickly; however, her physiotherapist has been practising walking outdoors with her which has increased her confidence* ***(self-efficacy)****, and has reassured her that she would expect her leg to feel tired after exercise and it's not an indication that something is wrong* ***(re-interpretation of physical symptoms)****.*

Intervention point 2: Setting a specific goal

Intervention point 2 aims to translate general goal intentions into a specific behavioural goal that will increase motivation, and act as a measure of performance. Goals should be specific and difficult enough to challenge the person without taking them beyond the limits of their ability, and should be achievable within the rehabilitation episode. Goals can be self-set, or assigned by another person as long as the purpose and rationale for the goal is clear and accepted by the patient, which requires negotiation.

Case study: Rosie and her physiotherapist have agreed, through negotiation, a ***specific goal****: 'Rosie will be able to take the dog out for a walk to the local park every morning'.*

Intervention point 3: Activating goal-related behaviour

Intervention point 3 aims to activate the goal-related behaviour through pro-active planning: action-planning and coping planning. Action plans detail the behaviour to be performed in terms of *what* the behaviour is and *when*, *where* and *how* they will perform that behaviour. Action plans can be written down for future reference by the therapist and/or patient. It is important to ensure that the patient is capable of performing an action plan successfully. Successful performance acts to increase self-efficacy, which supports future motivation towards the rehabilitation process. Performance failure acts to reduce self-efficacy, which can set back the rehabilitation process.

Simple self-report measures of self-efficacy in relation to specific action plans can be used to assess the likelihood of action plans being successfully implemented.

Coping plans require patients to identify likely barriers to them enacting their action plan. Strategies for overcoming or dealing with each barrier are then developed to increase the likelihood that the action plan will be performed successfully. There is some evidence that coping planning is more effective when the patient has had some experience of the barriers they are likely to encounter.

Case study: To optimize Rosie's motivation and performance in relation to set goals, the therapy team focus on increasing Rosie's ***self-efficacy****, and use of* ***action plans*** *and* ***coping plans****.*
Rosie's goal is to walk the dog to the local park every morning. The park is about a 10-minute walk from her house – she is not currently able to walk that far. The ***action plan*** *she and her therapist devised to work towards achieving this goal is, 'For the next three days, I will walk the dog half way to the park and back after breakfast'. Rosie identified fatigue as a barrier, the* ***coping plan*** *devised to cope with this is 'I'll sit down and rest on the bench at the end of the street if I feel tired, then try again'. The physiotherapist used a visual analogue scale to measure how confident* ***(self-efficacy)*** *Rosie was that she could successfully carry out the action plan (self-efficacy scale: 0 = not at all confident; 10 = very confident). Rose reported a self-efficacy score of eight and on that basis the action plan was confirmed.*

Intervention point 4: Appraising performance and giving feedback

Intervention point 4:

- appraises performance in relation to the action plan;
- measures progress in relation to the goal;
- gives feedback on performance.

This process motivates the patient to make any necessary adjustments to goal-related behaviour, and creates an opportunity to enhance self-efficacy through verbal praising of successes.

*Case Study: On her next visit, the physiotherapist discusses the action plan with Rosie (****appraisal****). Rosie did manage to achieve her action plan* ***(action plan attainment)****, and had to activate the coping plan on two of the three days. The physiotherapist praised her success (****feedback/ verbal encouragement****) which boosted Rosie's confidence. They went on to discuss the next action plan in relation to the goal. Further discussion highlighted difficulties Rosie had been*

*experiencing using her right arm to lift heavy objects such as the kettle (**goal negotiation**). Rosie and her therapist then focused on setting a specific goal to address this problem, and continued with the action-planning process.*

Development of the causal model into a practice framework

Overall, the expert task group members reported that the causal model was feasible to implement and was acceptable to patients and their family members, especially with the folder, both to guide professional practice and remind patients what they were working on. However, implementation of the causal model highlighted a number of important issues.

Need for incorporation of iterative decision making

Implementation of the causal model needed to be iterative rather than a simple linear process that was best illustrated within a circular framework. In contrast to the liner framework, the circular framework could be used to guide therapist and patient decision making following the appraisal/feedback stage. For example, to exit the framework on the basis that all goals had been achieved or to re-enter into the goal negotiation phase and prioritise the next goal to work on or to return to the goal negotiation/setting phase and reconsider if a goal is worth pursuing or to create a new action plan and/or coping plan in relation to meeting the existing goal. Incorporating this decision-making element into the framework allowed for the duration and complexity of the goal-setting process to vary according to the patient's needs.

This iterative process is shown in the schematic representation of the practice framework (Figure 3).

The goal-setting and action-planning practice framework exemplifies practitioners' experience and the theoretical assumption that setting a goal is only one part of the overall process. Within this process the four intervention points were labelled as follows: goal negotiation, goal setting, planning, and appraisal and feedback.

All four intervention points were implemented with each patient, however, the time spent on each varied between them, e.g. one patient was clear about their goals and so the therapist proceeded to setting a specific goal quickly. Another patient, however, who had very high expectations needed help to generate goals that were achievable in the foreseeable future, resulting in a lengthy period of negotiation.

All members of the task group reported that implementation of the four intervention points, and their corresponding behaviour change techniques, improved and structured their goal-setting practice and facilitated the process of setting and achieving rehabilitation goals. Therapists believed they were more focused, patient centred and timely in deciding when to exit the goal-setting process.

Interestingly, all of the goals identified were negotiated between the therapist and patient; however, it was not uncommon for action plans to be assigned by the therapists and simply agreed by patients through discussion. Assigned action plans generally relied on therapist expertise, e.g. the speech and language therapist assigned action plans which detailed specific exercises to improve voice production. It is also worthy of note that task group members working with two patients with deteriorating conditions found the goal-setting framework useful, and did not have difficulty identifying goals to work on.

The importance of implementing each stage of the framework in the context of the patient's unique social and environmental circumstances was also emphasized. For example, one of the included patients recovering from stroke lived in an upstairs flat and had a six-month-old baby. This meaningfully focused the whole process on the goal of being able to get the baby up and down stairs safely to access her local community resources. The task group felt that the goal-setting and action-planning framework was sufficiently flexible to be applicable to an individual patient's personal circumstances.

Working with the goal-setting practice folder

The task group reported that writing action plans down in the folder appeared to act as 'homework', encouraging patients to continue with their

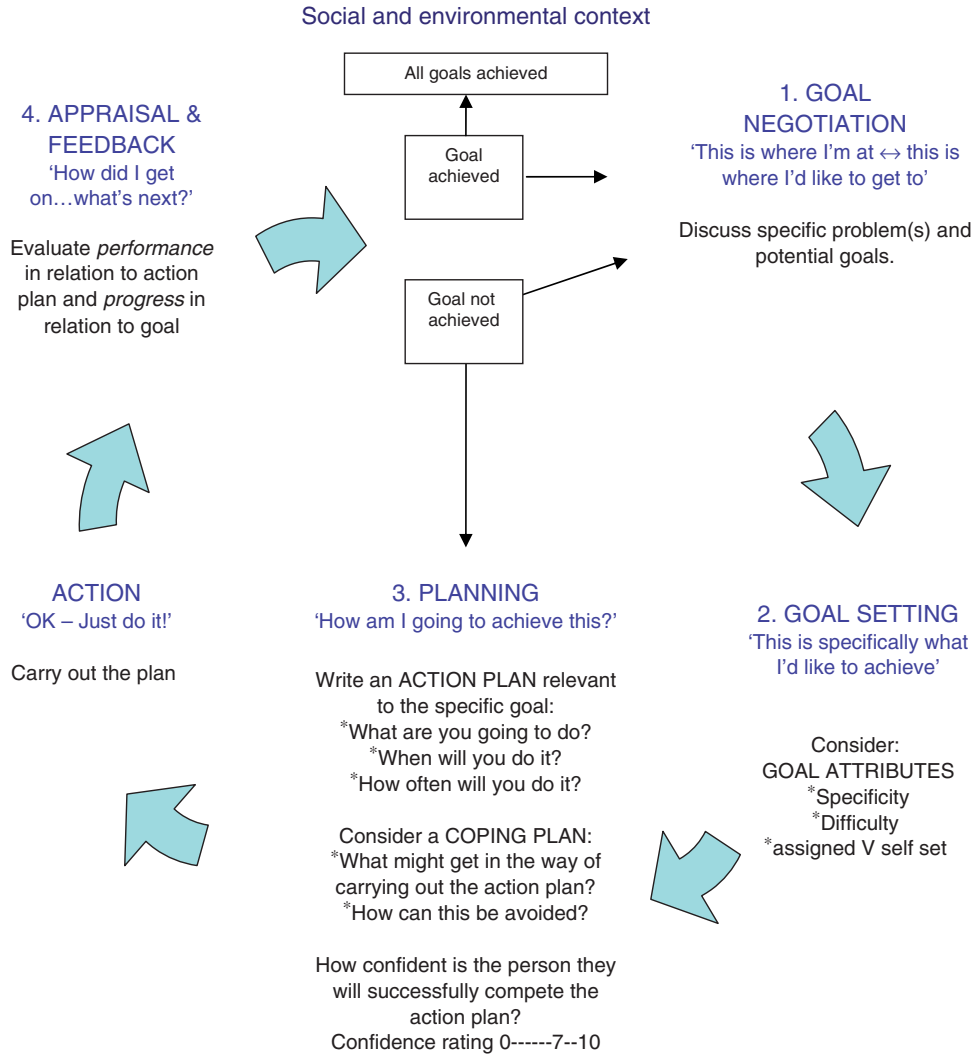

Figure 3 Goal-setting and action-planning practice framework.

rehabilitation independently. However, implementation of the framework with the patient with communication difficulties highlighted the need to adapt the folder to make it more accessible. This involved creating an illustration of the framework for patient use which included symbols and a simplification of language used. Additionally, Talking Mats® (www.talkingmats.com), an evidence-based low-tech communication framework routinely used by the team, which includes a set of symbols specifically developed to facilitate with the goal-setting process, was used for this patient throughout.[32]

Need for training

A number of problems encountered by the task group therapists highlighted the need for training of all team members prior to implementation of the framework, even with experienced therapists who were very familiar with the goal-setting process. For example, some members had difficulty breaking identified goals down into clear action plans that detailed *what* the patient had to actually do in the immediate future. Also, the nature of coping plans required clarification to emphasize that coping planning should be specific to the action plans set rather than plans

to cope with issues and problems or a more general nature.

Barriers to, and facilitators of, implementation

Use of the framework depended on collaborative working between the therapist(s) and the patient. This collaborative model might be challenged, e.g. if the therapist and patient had different views about which goals were realistic, time might be required to resolve these issues before the rehabilitation process could be moved forward.

Patients' emotional status was also identified as an important issue. The task group found it difficult to embark on the goal-setting and action-planning process if patients had not accepted or remained emotionally overwhelmed by the consequences of their health condition. Additionally, an unexpected deterioration in the patient's condition or lack of progress could render set goals unachievable and necessitate a move back to the goal negotiation stage.

Finally, use of the framework required an integrated multidisciplinary effort. The task group envisaged the need for alterations to weekly goal review meetings and how information was documented in department-based patient records. It was acknowledged that some changes to usual goal-setting practice would be required for effective implementation of the goal-setting and action-planning framework. Like the implementation of any new initiative at a team level, the task group envisaged that this would require much commitment, time and effort.

Discussion

We have developed a goal-setting and action-planning framework to guide the practice of setting and achieving rehabilitation goals in the rehabilitation setting. This process has involved completion of a literature review to identify theories of behaviour change relevant to the goal-setting process[16]; a causal modelling exercise to understand how these theories would inform the goal-setting process; and finally, convening a clinical task group to develop the theoretical causal model into a goal-setting and action-planning practice framework. The practice framework presented consists of four key components: goal negotiation, goal identification, planning, and appraisal and feedback.

Useful descriptive papers have been written to inform goal-setting practice in the rehabilitation setting,[14,33–37] and to illustrate where it fits into the overall rehabilitation process.[38] We are aware that the developed goal-setting and action-planning framework does not represent something that is completely new. Many clinicians will be negotiating goals with patients on a day-to-day basis and trying to break goals down into manageable steps, etc. However, we are not aware of any other theory-based practice framework, with explicit components, specifically developed to guide healthcare professionals systematically through the process of setting and achieving goals in a general rehabilitation setting.

The self-management interventions developed by Jones *et al.* and Lorig include participants choosing small targets and measuring confidence in relation to achieving these targets.[17–19,21] This mirrors the planning stage of the goal-setting and action-planning framework. It is not surprising there is overlap between the interventions as all three are based, to varying degrees on Bandura's Social Cognitive Theory. However, the goal-setting and action-planning framework differs with its focus on informing the clinical practice of setting and achieving rehabilitation goals. Also, in addition to Social Cognitive Theory, it includes constructs from the Health Action Process Approach and Goal Setting Theory which has incorporated the use of coping planning and consideration of important goal attributes into the framework.

The goal-setting and action-planning framework is not designed to be prescriptive. The circular nature of the framework allows it to be tailored to individual patients. This is important as the goal-setting process will vary in length and complexity between patients (the process may be quick and straight forward for a patient recovering from a knee replacement, whereas implementing the framework with a person recovering from a stroke or head injury may involve a lengthy period of input).

Previous research has suggested that patients should be involved in the goal-setting process.[39,40] Each of the four stages of the framework creates an opportunity for therapists and patients to work together to set, modify or change their goals and plans as the rehabilitation process progresses, or circumstances change. However, within the framework we have suggested that goals and action plans may be set by the patient, or assigned by the healthcare professional as long as a rationale is given that the patient understands and agrees with which, in effect, means that the goal is negotiated. This acknowledges that in clinical practice, it may be necessary for the therapist to use their experience and expertise to suggest or assign appropriate goals and action plans, e.g. to maintain patient safety or to optimize opportunities for progress, while maintaining a client-centred approach throughout the process.

We believe that development of the goal-setting and action-planning framework has been strengthened by the combined theoretical and clinical approach used. There is an explicit link between theory and practice so that clinicians using the framework should be clear about *what* they are doing, and *why* they are doing it in a particular way.

The clinical task group who developed the framework included a range of disciplines who worked within an existing community-based rehabilitation team in the NHS. We hope this has resulted in a framework that is clinically relevant and of use to other rehabilitation teams grappling with similar problems in implementing the goal-setting process.

Finally, one of the researchers (LS) was a working clinician within the team, and a member of the task group. This ensured a continuing focus on the theoretical-clinical fit of the framework.

Development of the framework did have a number of weaknesses which should be acknowledged. Our original review of the literature excluded papers that did not ground goal-setting interventions in a theory of behaviour change[16]; consequently, there may be successful interventions that have not been considered in development of the framework. We cannot be sure that the goal-setting and action-planning framework developed is in fact the best way of informing clinical practice – this is a matter for ongoing evaluation and development.

We did not explicitly consult with patients or family members in the process of developing the framework. Their views and experiences will be vital if the framework is to be acceptable and useful with a variety of patient groups. Consequently, further development of the framework will need to include the views and expertise of this group.

The framework was developed within one community rehabilitation team, and with a convenience sample of six patients. We believe this was a good starting point but acknowledge that this is a small number of patients, and that significant variability exists between types of rehabilitation teams and the patients seen within them.[41] Will the goal-setting and action-planning framework be feasible to implement, or acceptable to therapists and patients in other teams? Will the framework be clinically useful with the range of patients likely to be seen in community rehabilitation teams, particularly of an older age group? Further work is required to evaluate its feasibility and acceptability with more patients in a range of rehabilitation settings.

We acknowledge that including one of the researchers (LS) in the clinical task group introduced a potential for bias in the task group discussions of the frameworks clinical utility. In future development and testing of the framework, this bias will be removed.

Finally, development of the framework included the use of academic and clinical expert opinion, which has some inherent subjectivity that is difficult to eliminate. Other teams may have come up with a different causal model and framework, however, we hope the process we have used is sufficiently robust and transparent to justify the goal-setting and action-planning framework that resulted from our work.

There are important factors relevant to goal setting in clinical practice that the goal-setting and action-planning framework does not address. Which patients are most likely to benefit? Is there an optimum number of goals and action plans that should be worked on at any one time? Is there an optimum timeframe that should be set for goals and action plans to be

achieved? How can the framework be integrated into different team processes and structures? Rather than regard these unanswered questions as weaknesses of the framework, we view them as important reasons to continue working on a programme of research investigating the process of setting and achieving rehabilitation goals. The overall aim is to create a framework that informs therapy practice in a sophisticated way, and ultimately helps patients' achieve the goals that are important to them.

We have developed the goal-setting and action-planning framework in the hope that it will have a positive impact on patient outcomes – evaluating the impact of the process on patient outcomes is an important research priority.[42] Further development work is needed before we are in a position do this. For example, we need to be clear about how the framework can be successfully implemented with people who have communication and/or cognitive difficulties and what outcome measures are most likely to capture changes in patient outcomes.

Ultimately, the framework should be tested in a controlled trial, however the complexity of the goal-setting and action-planning process and the variability of what 'usual practice' is likely to be in the clinical setting create significant challenges to designing a suitable trial. Setting the trial in a highly structured environment, such as a stroke early supported discharge team, where 'usual goal setting practice' is clearly defined, and the patient group less heterogeneous, could be a starting point to consider development of a pilot trial – this will be the focus of our ongoing research.

In conclusion, a theory-based practice framework to guide clinicians in the process of setting and achieving rehabilitation goals has been described. Four key components of the framework have been identified and mechanisms predicted through which the framework is likely to exert its influence on patient outcomes. Use of the framework in the clinical setting provided initial support of its clinical utility, and highlighted factors that can act to facilitate or inhibit implementation. Further development of the framework is required, including input from patients and carers.

Clinical messages

- A theoretical rationale exists to support a systematic approach to goal setting in clinical practice that includes: negotiating rehabilitation goals between clinicians and patients, setting specific goals, breaking them down into action plans and appraising performance/giving feedback.
- Coping plans may be useful if barriers to action plan attainment can be anticipated.

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RESEARCH ARTICLE Open Access

Implementing a framework for goal setting in community based stroke rehabilitation: a process evaluation

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Abstract

Background: Goal setting is considered 'best practice' in stroke rehabilitation; however, there is no consensus regarding the key components of goal setting interventions or how they should be optimally delivered in practice. We developed a theory-based goal setting and action planning framework (G-AP) to guide goal setting practice. G-AP has 4 stages: goal negotiation, goal setting, action planning & coping planning and appraisal & feedback. All stages are recorded in a patient-held record. In this study we examined the implementation, acceptability and perceived benefits of G-AP in one community rehabilitation team with people recovering from stroke.

Methods: G-AP was implemented for 6 months with 23 stroke patients. In-depth interviews with 8 patients and 8 health professionals were analysed thematically to investigate views of its implementation, acceptability and perceived benefits. Case notes of interviewed patients were analysed descriptively to assess the fidelity of G-AP implementation.

Results: G-AP was mostly implemented according to protocol with deviations noted at the planning and appraisal and feedback stages. Each stage was felt to make a useful contribution to the overall process; however, in practice, goal negotiation and goal setting merged into one stage and the appraisal and feedback stage included an explicit decision making component. Only two issues were raised regarding G-APs acceptability: (i) health professionals were concerned about the impact of goal non-attainment on patient's well-being (patients did not share their concerns), and (ii) some patients and health professionals found the patient-held record unhelpful. G-AP was felt to have a positive impact on patient goal attainment and professional goal setting practice. Collaborative partnerships between health professionals and patients were apparent throughout the process.

Conclusions: G-AP has been perceived as both beneficial and broadly acceptable in one community rehabilitation team; however, implementation of novel aspects of the framework was inconsistent. The regulatory function of goal non-attainment and the importance of creating flexible partnerships with patients have been highlighted. Further development of the G-AP framework, training package and patient held record is required to address the specific issues highlighted by this process evaluation. Further evaluation of G-AP is required across diverse community rehabilitation settings.

Keywords: Stroke rehabilitation, Goal setting, Process evaluation, Multi-disciplinary team

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Background

Goal setting is seen as an essential component of effective and efficient stroke rehabilitation [1,2] and is implemented routinely in practice [3]. As well as creating an ideal opportunity for person-centred care [4], it can increase patient adherence to therapy programmes and optimise goal related behaviour [5-7] Patients with increased involvement in goal setting report greater satisfaction with their rehabilitation experience and that set goals have more personal relevance [8].

Approaches to goal setting have been described within rehabilitation [8-10] and self-management interventions [11,12]. Practice recommendations have been developed to guide writing Specific, Measurable, Achievable, Realistic/Relevant and Timed (SMART) goals [13] and ways to optimise involvement of people with communication difficulties in the process described [14,15]. Outcome measures based on patients' goals are well known in the clinical and academic arena [16,17].

Despite the prevalence of goal setting in practice there has, until recently, been a distinct lack of theory and evidence base to support its use. Theory and evidence-based approaches to goal setting are now however beginning to emerge. One such development is 'Good Goals', which is primarily aimed at improving the access and equity of occupational therapists' case load management and has so far been developed and tested in paediatric settings [18]. Another is the Goal Setting and Action Planning (G-AP) Framework, which has been developed using a theory-practice based approach within community based stroke rehabilitation [19,20]. The G-AP framework is designed to guide health professionals through a systematic goal setting process with a primary aim of optimising goal attainment and patient involvement.

Development of the G-AP framework

Development of G-AP has been guided by the Medical Research Council (MRC) Framework for the development and evaluation of complex interventions [21]. The methods used to develop G-AP have been fully presented elsewhere. In summary, they included: (i) a systematic review of the literature to identify psychological constructs with most potential to inform goal setting practice [19], (ii) a causal modelling exercise [22,23] to map these constructs onto a goal setting process [20] and (iii) convening of a multi-disciplinary task group to develop the theoretical goal setting process into a practice framework suitable for use in clinical practice [20]. This included development of a G-AP implementation guide (see Additional file 1) and a patient held record to record each stage of the G-AP process (see Additional files 2, Additional file 3, Additional file 4 and Additional file 5).

Our causal modelling exercise identified four distinct stages of the G-AP framework: goal negotiation, goal setting, action planning & coping planning and appraisal & feedback (see Additional file 6). In the *goal negotiation stage*, patients consider their current situation and identify the main problem(s) they want to address. In the *goal setting stage*, the identified problem is refined into a specific, challenging rehabilitation goal agreed by both health professional and patient. A*ction plans* detail what the patient has to do (in sequential steps) to meet the goal and *coping plans* detail strategies to be activated if barriers hinder action plan attainment. A self-report measure of self-efficacy is included in the planning stage to assess patients' confidence to complete set plans [11] (pg22); a lack of confidence (score less than 7) suggesting the plan should be modified to optimise the chances of the patient following through with it. Finally, the *appraisal* and *feedback stage* prompts a progress review and feedback from the health professional to the patient. The causal modelling exercise hypothesised that the G-AP framework would optimise patients' attainment of rehabilitation goals through their successful completion of action plans which would result in incremental improvements in goal sub-skills and self-efficacy [20].

Implementation of G-AP

Having developed the G-AP framework in a theoretically sound and clinically grounded way, it is now essential to evaluate its implementation within routine clinical practice [21]. Evaluating the implementation of G-AP will enable the systematic identification of any problems associated with its use which can then be addressed prior to further evaluation. We completed a process evaluation of G-AP's implementation within a community rehabilitation team (ReACH team) in Scotland. Specifically, we aimed to investigate G-AP's implementation with people recovering from stroke, its acceptability to patients and health professionals and their views about its benefits (if any). Furthermore, we aimed to explore the experience of implementation, identifying the actual practices and interactions that took place within the clinical setting.

Methods

Study design

The G-AP framework was implemented by the ReACH team for a 6 month period (Jan-June 2008) with all new stroke patients who would normally be involved in goal setting. Prior to implementation, all team members participated in G-AP training. This consisted of two, one hour sessions which covered use of the G-AP framework, the implementation guide and patient held record. This training was in addition to monthly updates team members received over a ten month period on the stage by stage development of G-AP and patient held record (ReACH Team involvement in G-AP development is described elsewhere [20]).

Following the 6 month implementation period, a cross-sectional process evaluation of the G-AP framework was conducted using mixed methods. Qualitative interviews with stroke patients and health professionals were used to gather insights about their experience of G-AP implementation and uncover their views about its acceptability and impact (if any) on outcomes that were important to them. The case notes of interviewed patients were reviewed to assess the fidelity of G-AP implementation. Health professionals did not know which patients would be interviewed or have their case notes reviewed during the implementation period. Ethical approval was obtained from the University of Stirling ethics committee. This study did not require NHS ethical approval as it was deemed a 'service evaluation' of an intervention recognised as current care. All patients provided informed written consent for the interview and case note review; all health professionals provided informed written consent for the interview. The interviews were conducted by a practising member of the clinical team (DMcL) who had secured protected time within his NHS post for this purpose. Patients seen by DMcL were not included in the study in order to minimise response bias.

The context - ReACH team and 'usual' goal setting practice

At the time of this study, the ReACH team had 16 health professionals delivering community rehabilitation services to patients (mostly under the age of 65) in NHS Forth Valley. Four rehabilitation assistants worked alongside health professionals to implement individual rehabilitation programmes. The majority of referrals to the team were for people with neurological problems including stroke, multiple sclerosis and head injury. The length of rehabilitation input was open ended, depending on how much time health professionals judged they need to meet set rehabilitation goals. This could vary from a few weeks to many months and would typically involve two or three visits from the team per week. Approximately six stroke referrals were accepted by the team each month. Only patients requiring multi-disciplinary input were seen by the team – those patients requiring unidisciplinary input (approximately two referrals per month) were forwarded to other services.

Goal setting was already well-established and highly valued in the ReACH team. Prior to G-AP implementation, the team set goals collaboratively with patients then worked towards them over a period of time. How the process unfolded after the goal setting stage was variable and reflected individual health professional's preferences. Goal appraisal and feedback was formally implemented at the end of team input when discharge was discussed with the patient. Goal setting information was kept in department based record - patients did not receive a copy of their personal goals. Health professionals discussed patient's goals in regular department based goal review meetings.

Participants

Patients

All stroke patients seen by the team were eligible for recruitment except for those being treated by DMcL. We expected the experience of G-AP to vary by gender and level of disability so planned to: i) purposively sample 12 patients with equal numbers of males and females; ii) include patients with a range of disability scores (assessed using each patient's initial Therapy Outcome Measure score [24]); and iii) to include at least two patients with aphasia.

Health professionals

All 16 health professionals (five occupational therapists; four physiotherapists; two speech and language therapists; two psychologists; two nurses and one dietician) working in the ReACH team were eligible for recruitment. We aimed to recruit eight of them, representing each professional group as follows: two occupational therapists, two physiotherapists and one each of the other four professions.

Data collection

Patients and health professional interviews were conducted following the implementation period. Patients were interviewed in their own homes; health professionals were interviewed in a ReACH team interview room. With permission, all interviews were tape-recorded and transcribed verbatim. If necessary, we planned to interview patients with communication impairment using Talking Mats™ (www.talkingmats.com), an evidence-based low-tech communication framework routinely used within team.

The interview guides for patients and health professionals were similar (Additional file 7 and Additional file 8). They covered views about participants' experience of using G-AP, any problems they had using it and perceived benefits or negative consequences of G-AP. All participants were asked to ground their answers in particular examples of goals that they had worked on. This was expected to produce illustrated examples of the practical use of G-AP in relation to real practice rather than at a general level.

Two of the researchers (D McL, LS) conducted the case note review of the interviewed patients. Information relevant to each stage of the G-AP framework was extracted using a data matrix (see Additional file 9). Patients were identified by number only.

Data analysis

Data was analysed to assess the implementation of G-AP, its acceptability and perceived benefits.

Patients records data

Data were analysed descriptively in relation to whether there was evidence of implementation of each of the G-AP stages or not.

Interview data

Interview data were analysed using the Framework approach to thematic analysis [25]. This allowed for the identification of both novel and expected issues within the broad themes of implementation, acceptability and perceived benefits, and facilitated comparison between health professionals and patients. The transcripts of both health professional and patient interviews were anonymised by an administrator not involved in the study. Following anonymisation, one of the research team (LS) listened to each recording to familiarise herself with the data, and checked transcripts for accuracy. LS developed an initial coding framework which was independently applied to 40% (6 /16) of the transcripts by two authors (D McL, DD) and a clinical research colleague not involved in the study (SB). The coding framework was refined following discussion of data within and between codes. Similar codes were grouped and redundant codes removed. The revised coding framework included three broad themes based on the specific research questions (views of the implementation, acceptability and perceived benefits) which allowed the identification of both expected (such as views on the G-AP stages) and unexpected (such as family/ carer input in the process and differences in partnership working) sub-themes.

LS applied the revised coding framework to all transcripts. Data under each main and sub-themes were grouped into a matrix and summarised to ensure the range of views expressed by both patients and health professionals were covered. Unexpected cases or those that did not fit the emerging analysis were examined to seek to refine or refute developing summaries and ensure their credibility.

Results

Participant characteristics

Thirty four stroke referrals were accepted by the ReACH team within the study period. Of these, four patients did not require on-going rehabilitation input, six patients required short interventions that were not underpinned by goal setting and one patient refused team input. The G-AP framework was implemented with the remaining 23 patients of which 15 were invited to participate in the study (eight were excluded as they were either being treated by DMcL (n = 6) or were not medically stable (n = 2). Eight patients provided informed consent to participate in the interview and have their case notes reviewed (see Table 1: Patients included in the study). The remaining seven chose not to participate.

Eight health professionals were invited to participate - two occupational therapists; two physiotherapists, one dietician, one nurse and two speech and language therapists. All agreed and provided informed consent to participate in the interview.

Implementation and acceptability of G-AP in clinical practice

Fidelity of G-AP implementation

The case note review suggested that goal negotiation, goal setting and action planning were implemented as intended with all eight patients; however, two aspects of planning - coping planning and measuring confidence to complete action plans - were inconsistently recorded suggesting they were not routinely implemented. Only two of the eight case notes documented use of coping plans. Four of the eight case notes documented measuring confidence to complete plans; however, this was inconsistent and appeared to be done informally rather than using the visual analogue scale. The appraisal and feedback stage was mostly implemented as intended, however inconsistencies were noted. One of the eight case notes did not document an appraisal/ feedback stage in relation to any action plans or goals.

Practical experience of the G-AP stages

Patient and heath professional views suggested that each stage of the G-AP framework had a distinct purpose and made a useful contribution to the overall process.

Goal negotiation and goal setting

Although the goal negotiation and goal setting stage had a distinct purpose, they often unfolded as a continual process in practice with problems identified in the former informing specific goals set in the later. For example, Patient 5 talked about how forgetting household chores (for example, ironing her son's shirt for work) led to a goal about using specific memory strategies to remember daily tasks. Health professional 5 described how a discussion with one patient about her frustration at people completing her sentences for her led to a goal about being able to finish sentences in day to day conversation.

Health professionals said they found the process of identifying *general* problem areas and goals in the goal negotiation stage relatively straight forward, but refining these into a *specific* problems and goals in the goal setting stage was more challenging and influenced by factors such as the patient's recovery expectations and their cognitive and communication status.

Health professionals described a variety of tools and strategies to facilitate the process of negotiating and setting goals. Of particular importance was the use of

Table 1 Patients included in the study

Patient	Sex	Age	Ethnicity	Employment pre-CVA	Social situation	Disability level*	Speech difficulty	HPs involved
1	M	64	White Scottish	Unemployed	Lives alone	moderate	yes	PT, OT, SALT
2	F	59	White Scottish	Bank clerk	Lives with husband	moderate	no	PT, OT
3	M	53	White Scottish	Engineer	Lives with wife	moderate/ severe	yes	SALT, OT, N, D
4	M	78	White Scottish	Retired	Lives with wife	moderate	yes	OT, SALT
5	F	43	White Scottish	Clerical worker	Lives with husband	moderate	yes	SALT, OT, PT
6	M	65	White Scottish	Retired	Lives with wife	moderate	no	PT, OT
7	M	56	White Scottish	Driver	Lives alone	mild	yes	SALT, OT, PT
8	F	29	White Scottish	Nursing auxiliary	Lives with husband	mild	yes	SALT, OT, PT

PT Physiotherapist, *OT* Occupational Therapist, *SALT* Speech and Language Therapist, *N* Nurse, *D* Dietician, *HP* Health Professional. * Based on averaging Therapy Outcome Measure scores across Impairment, Activity, Participation, Wellbeing.

Talking Mats® with people who had aphasia as one health professional explained:

> ***Health professional 2*** *"M's got severe communication problems, both receptive and expressive, so just sitting talking to him we would've got nowhere … So we used the 'mats'* [Talking Mats®] *quite early on and got some idea of the areas that he was particularly concerned about and then tried to use it in conjunction with this, the G-AP framework. He could certainly identify what mattered to him using symbols."*

Other useful tools at this stage included the work sheet entitled "Coming up with the goals" included in the G-AP record (see Additional file 3) and using a blank sheet of paper to develop a visual representation of goal priority areas. Patients and health professionals also reported useful questions or 'stock phrases', for example: *"Think about what you would like to be able to achieve by …….* (Future date)*"* (Health Professional 2) or *"What sort of things did you enjoy prior to having the stroke?"* (Patient 4, Patient 8) or *"Think of something very specific to do with that activity* (e.g. cooking) *you would like to work on"* (Health Professional 2). Giving patients examples of potential goals to consider was also seen as useful.

Action planning

Patients and health professionals described action plans as a series of 'stepping stones' or 'targets' that created a manageable route to achieving specific goals. For example;

> ***Patient 2*** *"A.* [rehabilitation assistant] *used to take me down to* [name of a shop] *and then she'd come round with me, and then she'd take me down, and then she'd stand and watch me, then she'd take me down* [pause 3 secs] *and, and sit in the car, and let me come back. And then I got a taxi and met A. And then the last time I went down and came back in a taxi* [myself]."

Action plans were often viewed as 'homework' by patients. Typically, they would be completed by the patient independently (for example, practicing a peg board activity to work on finger dexterity – Patient 3) or with support (for example, supervised practice using the bus – Patient 1). Health professionals reported numerous instances where progress depended on *them* completing an action plan rather than the patient for example, arranging a prescription for a supplement to improve nutritional state (Heath professional 4). Patient and health profession reports suggested patient adherence to action plans was usually high, with some exceptions.

Coping Planning and measuring confidence to complete plans

For all health professionals, these two aspects of the framework were a new and unfamiliar addition to their clinical practice. Those health professionals who discussed coping plans (only two of the eight health professionals interviewed) viewed them as useful. For example:

> ***Health professional 7*** *"I have spoken to folk about barriers. (Em), not every time, but I think it is definitely a useful thing to do. If people think through what might get in their way of them achieving these steps* [action plans], *if they've particular tasks to do, I think (em), you can kind of problem solve if there is a particular barrier."*

Health professional reports suggested that barriers were sometimes considered in a general way rather than in relation to specific action plans. For example, Staff member 8 explained how she had considered the impact of osteoporosis on her patient's general ability to achieve rehabilitation goals.

Patients did not refer to coping plans per se, but did discuss strategies they had used to overcome anticipated barriers to successful action plan completion. For example, Patient 4 described how he had identified memory issues as a potential barrier to goal completion: He

thought he may forget the steps required to access his on-line banking system. In response to this, the health professional developed a coping plan - she wrote down instructions to access the online banking and encouraged him to use the instructions if he got 'stuck' whilst trying to complete his action plan.

Health professionals viewed confidence as an important factor that would influence action plan completion; however, many reported they had not got into the 'habit' of using the visual analogue scale or preferred to measure confidence in an informal way as reflected in the following excerpt;

- *Interviewer: "Do you use the confidence scale?"*
- *Health professional 4: "I don't"*
- *Interviewer: "You don't?"*
- *Health professional 4: "Bad habit - Not having got into the habit of using it. It's almost doing it without actually formalising it. So I don't formalise it in terms of giving the individual* [the patient] *a score or asking them how they would score themselves, but I do do it."*

Some found measuring confidence it a time consuming step at the end of the planning stage. One health professional reported she did not fully understand the purpose of the scale and so was not inclined to use it.

Appraisal and feedback

Both health professionals and patients viewed this stage as an opportunity to gauge progress; however, some health professional reports suggested that it was implemented intermittently to review goal progress rather than on an action plan by action plan basis.

Patients who judged they were doing well were encouraged. One patient described how she felt after successfully climbing up a step: "*Wow, my leg is not as bad as I thought it was!*" (Patient 2). Conversely, negative self-appraisal was discouraging as highlighted when another patient described how he felt after not achieving his goal of completing a crossword, "*I was just becoming really angry with myself and frustrated.*" (Patient 8).

The feedback health professionals gave to patients was reported to serve a variety of purposes, the main one being to enhance confidence (self-efficacy) through praising success. As one patient explained, *"Every move I made, she said well done, and indeed things cheer you up, it's amazing what it does psychologically just to say well done!"* (Patient 2). Feedback also provided patients' with reassurance, for example - *"You'll get there, don't worry about it"* (Patient 7) and advice (often about pacing), for example *"You're giving yourself too much to do, just take your time, take it on a week to week basis and you'll get there"* (Patient 3). Health professionals reported that the feasibility of implementing the appraisal and feedback stage could be compromised by time constraints.

An important acceptability issue raised by health professionals was that the appraisal and feedback stage made it *explicit* to patients if they were not making progress, and that this could have a negative impact on their well-being. Different strategies used to manage this were reported including, avoiding or not explicitly addressing goals that had not been achieved, re-framing failure in a positive way or providing support and reassurance. For example:

> ***Health professional 3*** *"I think you have to be careful about how you deal with that* [goal non-attainment] *with the patient and how you approach it, that you do it in a positive way saying, 'well OK, this is what we started, this is what we thought, you know, it's not quite worked out like that, but we'll go back and we'll try something else'."*

Conversely, none of the patients voiced concerns about goal non-attainment or how it might impact on their well-being. Although failure to achieve action plans and goals was said to be disappointing, some patients said they used what they had learned from their experience to re-assess their situation and to consider more realistic goals. For example, one patient worked as a driver and said that getting his driving licence was an important goal for him so he could return to work. However, failing his driving assessment was an important experience that led him to conclude that getting back to work was not a realistic goal.

> **Patient 7** *"After I had my, my driving assessment, I knew that the information* [information as he was driving the car for example signs and oncoming vehicles] *just wasn't coming quick enough.... I thought it was doable, but I've been realising* [since] *I got through the assessment, and how I done, that I said - this is not going to be doable."*

Decision making

Health professional and patient accounts suggested that appraisal and feedback lead to explicit decisions being made about what to do next the basis of whether satisfactory progress was being made or not. Collectively, appraisal, feedback and decision making performed a regulatory or adjusting function within G-AP. If progress was satisfactory - subsequent action plans were set and/or new goal(s) negotiated as illustrated in this health professionals account of a conversation she had with a patient after a successful visit to the local shop:

> ***Health Professionals 5*** *"Right, we've been to the shop and everything's gone fine, next time I'm going to get*

you to walk in [the shop] and I'm going to wait at the door. Are you happy with that?"

If progress was not satisfactory, new re-targeted plans were set or the goal was downgraded or abandoned. When discussing his lack of progress due to deteriorating health, one patient reflected:

Patient 1 *"We* [the patient and the health professional] *sat down and we discussed it all, you know, but the goals have come down* [been downgraded] *now, know what I mean? It's just not going to happen, what we thought at first* [going into town on the bus]*."*

Factors that contributed to goal non-attainment included an unexpected deterioration in physical heath, lack of anticipated recovery from stroke related impairments or underestimating the impact impairments would have on achieving a particular goal.

The G-AP patient held record

On the whole, patients and health professionals valued the G-AP patient held record. Most patients' referred to it and said it was particularly important at the beginning of the rehabilitation input where it guided what they practised and helped them monitor progress. Patient 2 referred to the record as her "*bible*" as she looked at it daily to keep her on track with the action plans she had to work on – even taking it on holiday for reference. Some also suggested that the G-AP record allowed family members to find out about the goals and action plans in place, creating an opportunity for them to consider how they could contribute to the process, for example, suggesting new action plans and /or encouraging and supporting their family member to complete them. Those patients who did not use the G-AP record said they preferred to discuss goals and action plans with the health professional and commit them to memory rather than paper. A marginal but important view expressed by one patient with cognitive difficulties was that the G-AP record was confusing and an annoyance;

Patient 8 *"I just feel, feel there is so much paperwork here, here and I get confused with it and tha, that's me, I'm not a novice to pay, paperwork believe you me, but I feel that there's just too much there and my, my some, some, sometimes my concentration levels are poor and to sit, I've got to sit and really think,* (er), *right* [going through papers] *no wait a minute look for* [goal] *two."*

Health professionals also reported benefits of using the patient held record, for example:

Health professional 5 *"I think the folder's* [G-AP patient held record] *a great idea … I have always felt very strongly that the people that we work with should have something to refer to.... And they need to have notes of what our expectations are of them so it works extremely well from that point of view. It's something that they each focus on when we meet at review and whatever, and see the progress they're making."*

It was seen to prompt implementation of each stage of the G-AP framework and to enhance interdisciplinary working (for example, setting goals in the context of those already set or suggesting action plans under goals set by other professionals). However, some health professionals reported a logistical problem getting information written in the G-AP record back into patients' department based service records (in spite of using carbon paper sheets within the record). This negatively impacted on team discussion at weekly goal review meetings which was viewed as a significant problem. They also noted that patients with reading difficulties did not benefit from a written record of their goals and action plans. Finally, some health professionals reported that writing goals and action plans in the G-AP record was a new and added task for them which required extra time to complete and had not been habitually integrated into their routine practice.

Views on factors that facilitated and inhibited G-AP implementation

A sub-theme identified from the data was the factors that facilitated and inhibited use of G-AP in clinical practice. These could be grouped under the headings of health professional factors, patient factors and process factors (summarised in Table 2: Factors that facilitated/hindered use of the G-AP framework). Facilitating factors included: patients having previous experience of goal setting, health professionals being confident in their goal setting abilities and rehabilitation assistant involvement in the process. Inhibitory factors included: patients who felt emotionally overwhelmed with the consequences of stroke, health professionals lacking experience in post stroke recovery and work-load pressures. A particular inhibitory factor identified by health professionals was severe receptive and expressive aphasia. In these instances, professionals said they tended to use G-AP with family members on the patients behalf. All of these factors interacted to create an optimal or less than optimal condition for G-AP implementation.

Partnership working

A second sub-theme within the health professional and patient accounts was the bespoke and dynamic nature of partnerships between health professionals and patients.

Table 2 Factors that facilitated/ hindered use of the G-AP framework

	Facilitators	Inhibitors
Patient factors	• Previous experience goal setting • Familiarity with the G-AP process • Being in the 'right frame of mind'	• Cognitive impairment e.g. poor insight, executive dysfunction • Communication difficulties • Complex emotional/ social/ health issues • Unrealistic expectations
Process factors	• Rehabilitation assistant involvement • Goal meetings in the patent's house • Consistent use of G-AP record • Explaining the G-AP process to patients at the outset	• Individual health professionals' waiting lists resulting in team members initiating input at different times • Time pressures leading to incomplete implementation of the process • Staff absence
HP factors	• Experience of using goal setting • Experience of post stroke recovery • Confidence in goal setting abilities	• Lack of experience using goal setting • Lack of experience of post stroke recovery • Not habitually using G-AP in routine practice • Lack of confidence using G-AP
Other		• HP and patient having differing views about priorities and/or what constitutes improvement

HP Health Professional.

Respondents talked about differing roles in the partnership. Patients described their main role as informing health professionals about their goal priorities and giving them feedback about what they felt they could and couldn't achieve. Health professionals described their main role as guiding and encouraging patients through the G-AP stages, for example helping them to tailor unrealistic or general goals into specific, achievable goals and providing education and information that would help them make informed goal choices.

Accounts from patients and health professionals also suggested that a continuum existed in relation to who took the *lead* during the G-AP process with 'patient led' at one end and 'health professional led' at the other. When patients preferred health professionals to take the lead, they said that health professionals were the 'experts' with experience of dealing with other people in the same situation, or had specialist knowledge that made them better placed to suggest goals that would help them in their recovery. When asked about setting goals, Patient 2 said: *"I went along with E* (physiotherapist); *she was right 100% like you know."* When patients took the lead, they tended to have experience of setting goals, either in a previous life context (for example, in a previous job or hobby) or during their current rehabilitation episode. They also had clear ideas about valued activities they wanted to resume and a belief that recovery, to a large extent, was dependent on their own efforts as Patient 2 explained, *"It's in here, in my head really, my own attitude has got to be right to get myself where I want to be".* Regardless of who led, both groups described each stage of the process as collaborative with agreed goals and action plans reflecting patients' priorities and unique personal circumstances.

Perceived benefits of G-AP

Patients primarily judged the effectiveness of G-AP on the basis of whether they were able to carry out their goals as planned. When asked to explain how she knew that G-AP had worked for her, Patient 5 said in relation to her goal of returning to getting her shopping at the supermarket: *"Because I was doing it, and pleased to be doing it."* Patients described how identifying personal goals and action plans increased their motivation by acting as an incentive – something to aim for. A repeated view was that achieving goals and action plans produced a sense of achievement and an important boost in confidence. For example;

- Patient 8: *"When, when you manage to achieve that goal you think, oh yes well I can go, go, go a wee bit further now."*
- Interviewer*: "And was that positive?"*
- Patient 8: *"yeah, yup because right at the beginning of the process you feel so neg, neg, negative and you feel how am I going to get my life ba, back together again?"*

A general view held by patients was that the positive relationship they had established with health professionals was a significant factor that contributed to their recovery.

Health professionals talked about the benefits of G-AP at the patient and practice level. There was a prevalent view that the collaborative nature of the G-AP process helped patients have a greater sense of control and

participation in their rehabilitation. Additionally, it was felt that patients were more focused on their goals, which had a positive impact on their motivation and adherence to the goal plan. Health professionals perceived their practice to be more patient centred (with goals set reflecting patient rather than professional priorities), goal focused and efficient (due timely changes being made to the goal plan if progress was not being made).

Discussion

The results of this process evaluation provide preliminary support for the clinical usefulness of G-AP. It is broadly acceptable and has perceived benefits from both patient and health professional perspectives. However, the evaluation highlighted areas in which G-AP could be improved. We describe how we have addressed each area for improvement below and discuss our findings in relation to partnership working when using the G-AP framework.

Combining goal negotiation & goal setting and making decision making explicit

To optimise its usefulness to health professionals, we have revised the visual illustration of the G-AP framework to better reflect how the process unfolds in practice. Goal negotiation and goal setting, whilst remaining distinct components of the process, have been merged into one stage and an explicit decision making component included in the appraisal and feedback stage to clarify options available when progress is judged to be either satisfactory or not (see Figure 1 – The revised G-AP framework).

The experience of goal non-attainment

Our results highlighted health professionals' concerns about the impact of goal non-attainment on patients' emotional well-being. We believe that failure to achieve goals is inevitable in stroke rehabilitation, because neither patients nor health professionals can foresee some of the factors that may render goals unachievable or predict with absolute accuracy what goals can be achieved at some future point.

The tension that health professionals have to manage when trying to maintain patients' hope and motivation whilst at the same time dealing with disappointment and fostering realistic expectations about the future has been highlighted [26,27] This is indeed a difficult balancing act that has to be managed on a patient by patient basis. Our patient data suggested that failure to achieve set goals *did* lead to disappointment and frustration; however, this experience helped them to understand and accept their limitations and disengage from un-attainable goals. These findings raise the possibility that, for some patients, goal non-attainment may be a valuable and necessary part of the rehabilitation process.

This is consistent with the Social Cognitive Theory perspective which views satisfaction of goal accomplishments and dissatisfaction of failure as important outcomes that will influence a person's motivation to act in new ways to increases the likelihood of future goal success [28]. An improved G-AP training programme will highlight the regulatory function of goal non-attainment.

Optimising implementation of G-AP stages

The goal negotiation, goal setting and action planning stages of the framework were routinely implemented. This is perhaps not surprising as these aspects of the goal setting process are well documented and established in practice, albeit action plans often being referred to as short term goals within this literature [26,29-32]. This evaluation showed that it was the novel additions to practice - coping planning, measuring confidence to complete action plans and appraisal and feedback on an action plan by action plan basis – that were not always implemented. Health professionals reported a number of factors to explain this including not having got into the habit of routinely implementing these aspects of the framework, not fully understanding their purpose or time constraints.

Whilst health professionals are likely to consider the issues of barriers, coping, confidence and feedback in routine practice; use of the G-AP framework requires a targeted, systematic approach. Although the theoretical justification for this approach has been described [20], the G-AP training delivered prior to the implementation period may not have covered these aspects of the framework in enough detail or highlighted the subtle but important differences between routine goal setting practice and that informed by the G-AP framework.

Previous research has highlighted the importance of health professionals acquiring the necessary knowledge, skills and habits for effective implementation of evidence based practice [33]. Improved G-AP training will focus on enhancing health professionals' knowledge of novel aspects of the framework, how they differ from 'usual' practice and why they are important. Improved training will also provide opportunities for skills development by practicing implementation of these specific stages in clinical role play scenarios. To facilitate habitual implementation of novel stages, the G-AP patient held record will be revised to include a visual prompt for health professionals to consider the need for a coping plan, measure patient's confidence at the action planning stage and to complete appraisal and feedback following action plan completion. Barriers to implementation will be identified within the training and potential solutions explored and developed. Finally, the G-AP implementation protocol will be revised so that measuring confidence to complete action plans can be done formally (using the visual analogue scale) or informally (by just asking patients how confident they feel) depending on the health professionals judgement of which would be the most helpful.

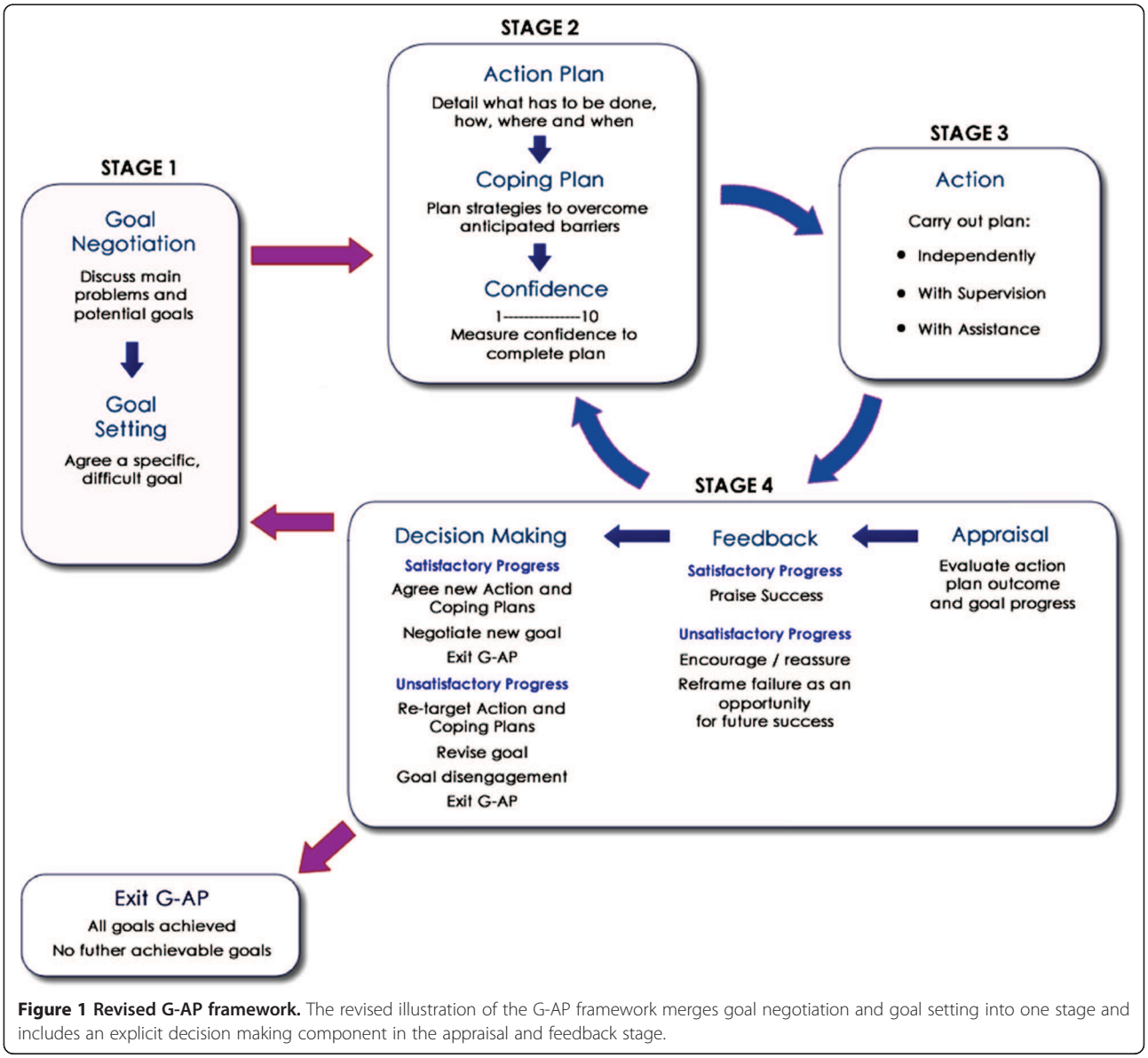

Figure 1 Revised G-AP framework. The revised illustration of the G-AP framework merges goal negotiation and goal setting into one stage and includes an explicit decision making component in the appraisal and feedback stage.

Use of the G-AP patient held record

Patients do not typically have a record of the rehabilitation goals they are working towards [3]. The G-AP patient held record sought to address this issue within the ReACH team. Although it was generally well received by health professionals and patients, important acceptability issues were raised. The record will be re-designed to resolve the logistical issue of having information documented within the record available for team use (for example, during team based goal review meetings). Additionally, future use of the record will be sensitive to individual patient's views of its perceived usefulness (particularly those who have cognitive and /or communication difficulties) and will aim to facilitate family member involvement in the process if both parties are agreeable.

Partnership working when using the G-AP framework

Of particular interest are our findings on partnership working. Previous research has shown that patients' recovering from stroke want to be actively involved in goal setting [34]. This study has shown that feeling involved can incorporate both patient and professionally-led approaches and that this will vary between patients at different stages of the process, and between different goals. As suggested in relation to shared decision making [35] and decisions about screening [36] health professionals should be flexible in their approach to allow patients to engage in the partnership in a dynamic way, and to lead or be led, depending on their preference at that particular time.

Limitations of this study

Four main limitations of this study have been identified. Firstly, the set up and operation of community rehabilitation teams in the United Kingdom is highly variable [37] – conducting a process evaluation of G-AP in one setting has been a sensible starting point, but does not demonstrate that G-AP could be successfully implemented in the range of community rehabilitation teams currently providing services to people recovering from stroke, particularly in the over 65 age group which is more representative of the stroke population [2].

Secondly, we have tried to embed development and evaluation of the G-AP framework within the clinical setting; hence our continued work with the ReACH team in NHS Forth Valley. We hope this has resulted in an evaluation that is both robust and clinically focussed; however, we acknowledge that conducting the evaluation within ReACH team and having DMcL conduct health professional interviews introduced the potential for respondent bias. We feel this potential was minimised by the engagement of the ReACH team through-out the development and evaluation process. This fostered a strong commitment within the team to complete an evaluation of the G-AP framework that was both accurate and transparent.

Thirdly, a small number of case notes were reviewed to assess the fidelity of G-AP implementation. In accordance with our consent procedures, the case note review was limited to patients who had consented to be interviewed. A separate consent procedure for this aspect of the study may have resulted in a larger number of patients consenting to their case notes being reviewed thus strengthening our evaluation of the fidelity of G-AP implementation.

Finally, our study sample of patients and health professionals was small, with patients in the over 65 age group being under-represented. Additionally, only two of the eight health professionals commented on coping planning. Consequently, we cannot be certain that we have reached data saturation within all themes or that our findings are equally relevant to those people recovering from stroke in the older age groups.

All of these limitations will be addressed by conducting future evaluation of G-AP: (i) in diverse teams that have had no prior exposure to its development or the researchers conducting the study (ii) with stroke patients over the age of 65 and (iii) with a revised consent procedure for the case note review.

Implications for clinical practice

The findings of this study support the inclusion of goal negotiation, goal setting, planning and appraisal, feedback & decision making when using the G-AP framework community based stroke rehabilitation. They also highlight the regulatory function of goal non-attainment and the need for health professionals to be confident they can manage both success and failure to achieve goals in clinical practice. Finally, we believe that health professionals should be flexible in their partnerships with patients, and be open to both patient and professionally led approaches.

Implications for future research

The importance of understanding how complex interventions operate and impact at the patient, health professional and service level has been emphasised [38]. It was reassuring that, as we predicted, the perceived benefits of G-AP reported by patients and health professionals included the positive impact of action plan attainment on self-efficacy and goal attainment. However, our findings highlighted the need to look beyond outcomes at the patient level, and to consider the impact of G-AP at the level of the health professional (for example, more efficient work practices), the family/ and or care giver level (for example, increased participation in the process) and at the team level (for example, improved inter-disciplinary working). These findings will be an important consideration when designing a future study to examine the effectiveness of G-AP in a controlled trial.

Conclusion

G-AP has been perceived as both beneficial and broadly acceptable in one community rehabilitation team; however, implementation of novel aspects of the framework was inconsistent. The regulatory function of goal non-attainment and the importance of creating flexible partnerships with patients have been highlighted. We have developed the G-AP visual illustration and plan specific revisions to G-AP training and patient held record in response to our findings. We are now in the process of developing an evaluation of the revised G-AP on a larger scale across diverse team settings.

Additional files

Additional file 1: G-AP implementation guide.
Additional file 2: G-AP patient held record.
Additional file 3: G-AP patient held record.
Additional file 4: G-AP patient held record.
Additional file 5: G-AP patient held record.
Additional file 6: Original G-AP framework.
Additional file 7: Patient interview guide.
Additional file 8: Professional interview guide.
Additional file 9: Data extraction matrix.

Abbreviations

SMART: Specific, measurable, achievable, realistic/relevant and timed; G-AP: Goal setting and action planning; MRC: Medical research council; NHS: National health service.

Competing interests

The authors declare they have no competing interests.

Authors' contributions
LS developed study concept, carried out data analysis and interpretation and drafting of manuscript. SW developed study concept and design, assisted in data analysis and interpretation and completed critical revision to paper. DD developed study concept and design, assisted in data analysis and interpretation and completed critical revision to paper. D McL developed study concept and design, completed acquisition of data and assisted in data analysis. ED assisted in interpretation of data and made critical revisions to paper. All authors read and approved the final manuscript.

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Aug 2007

Goal setting and action planning process

G-AP

ART REFERRAL

* Admin staff send out *'patient information leaflet'* with screening appointment letter
* If referral is 'urgent' or 'soon', professional may need to take out *'patient information leaflet'* at time of screening
* Admin staff will make up *'Patient notes'* and slot in G-AP folder

SCREENING

* Complete screening and complete signing of patient consent form
* **If appropriate**, introduce G-AP folder and G-AP process at time of screening
* Introduce '*Coming up with the goals*' work sheet, and **if appropriate**: a) begin to complete together, or b) encourage patient to think about and complete

1ST PATIENT REVIEW MEETING

* Patient discussed under 'new patients' on list
* If patient accepted for ART, key worker and rehab assistant identified, pink referral slips distributed as required
* 'Goal meeting' date scheduled (usually 4/52)
* 'Review date' scheduled (usually 8/52)
* If patient not accepted for ART – complete necessary documentation inform relevant people e.g. GP/ referrer

1st visit by each professional

* Check screening complete and consent signed
* Initiate assessment and complete outcome measures in a timely fashion
* Goal negotiation: Use *'Coming up with the goals'* sheet to facilitate discussion
* **When appropriate**, agree goal(s) and action plan(s) – document on *'Action Planning Sheets'*
* Copies of completed *'Action Planning Sheets'* should be returned to patient's notes
* Write up continuation sheets in patient notes

2nd and ongoing visits

* Check performance in relation to action plans, and progress in relation to goals – discuss with patient (and carer) and provide feedback
* Complete comments box on *'Action Planning Sheets'*
* Continue rehabilitation input, using G-AP framework
* Negotiate and agree ongoing goal(s) and action plan(s) and document
* Copies of completed *'Action Planning Sheets'* should be returned to patient's notes
* Write up continuation sheets in patient notes
* Arrange 'goal meeting' with relevant team members and patient in their house if necessary

GOAL MEETING

* All team members who have received a referral for this patient should attend the goal meeting, whether their input has started or not
* Ensure 'Goal Plan and Outcome Measures' sheet is up to date or complete
* Key worker should co-ordinate discussion
* Focus team discussion on patient progress in relation to set goals, future plans and other relevant issues

REVIEW MEETING

* Key worker feedback on progress in relation to active goals
* Decide date of next review meeting
* Decided if date for further Goal Meeting is required

DISCHARGE

* Complete all outcome measures prior to meeting (Goal outcomes, TOMS and Barthel)
* Feedback outcomes of ART intervention to team and confirm discharge
* Complete *'Goal planning and outcome measures'* sheet - use as template for D/C summary
* Discharge summary should accurately reflect overall D/C status, and be sent to relevant agencies as soon as possible
* Complete Activity monitoring sheets

Additional File 2

GOAL SETTING…

What is goal setting?

Goal setting involves everyone (that is you, the people who are important to you and the rehabilitation team) working together. We will talk about and agree on the goals you hope to achieve, and changes you would like to make.

What can you do?

Tell us a bit about yourself and what is important to you. Think about where you're at right now, and where you'd like to get to. If you can, write down your goals in the rehabilitation folder… there are no rights or wrongs!

What will the rehabilitation team do?

We will find out how you have been doing, and explore the specific difficulties you've been facing. Then we can decide on the most important things that you'd like to work on. To keep us on track, we will agree on the small steps that will guide us along the way.

When the team input will finish

Once you've worked through you're goals and the team input is complete, you will be discharged. If you need advice further down the line, then you can contact us.

Additional File 3

NHS Forth Valley

Coming up with the goals….

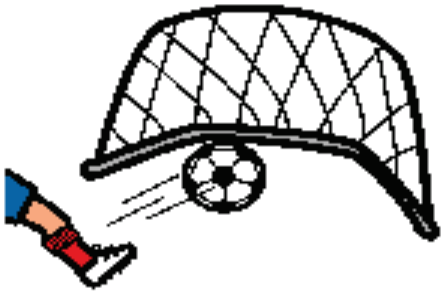
1. What are your main difficulties?

"This is where I'm at just now"

-
-
-
-
-
-

2. What are your specific goals?

"This is where I'd like to get to"



-
-
-
-
-
-

Additional File 4

GOAL and ACTION PLANNING SHEET

Name: ……

SPECIFIC GOAL: *"This is the goal I'd like to achieve"* **Goal Number:**	**OUTCOME** **Date:**
Date set:	Achieved ☐ Partially achieved ☐ Not Achieved ☐

ACTION PLAN *"This is how I'm going to go about achieving it"*	**SUCCESS?**	**COMMENTS** *"How did I get on?"*
Date Set: Target Date: *Confidence level 0 - 10* *Any barriers that might get in your way?*	**YES** **NO** **NOT QUITE**	
Date Set: Target Date: *Confidence level 0 - 10* *Any barriers that might get in your way?*	**YES** **NO** **NOT QUITE**	
Date Set: Target Date: *Confidence level 0 - 10* *Any barriers that might get in your way?*	**YES** **NO** **NOT QUITE**	

Additional File 5

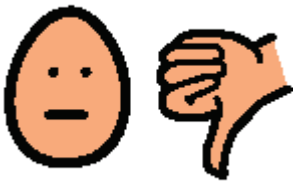
CONFIDENCE SCALE

0 ---------- 5 ---------- 10

NOT AT ALL CONFIDENT

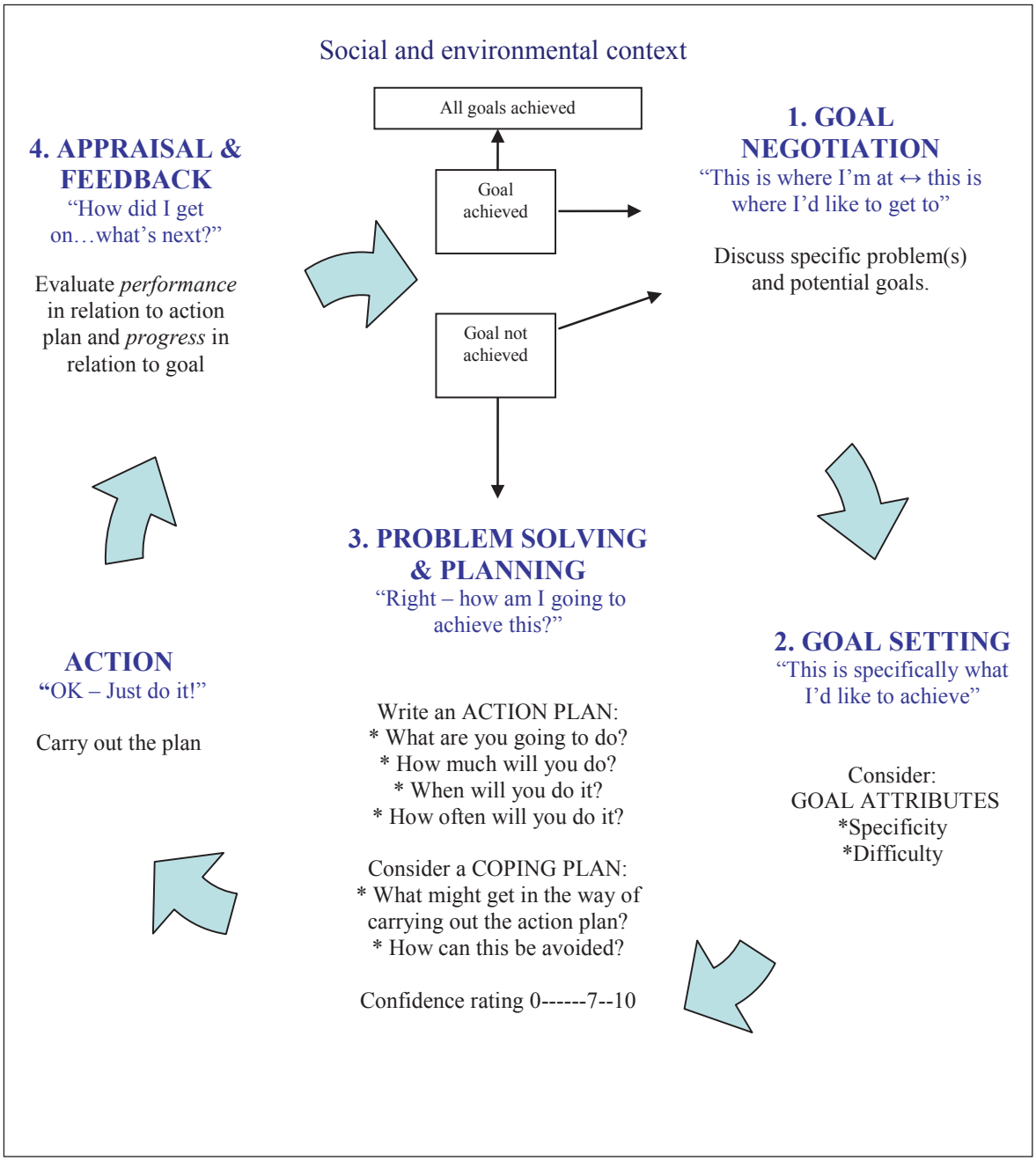
SOMEWHAT CONFIDENT

TOTALLY CONFIDENT



Question: How confident are you that you can……

Additional File 6: Original G-AP Framework[1]



1. Originally published in Clinical Rehabilitation: Scobbie, L., Wyke, S., Dixon, D. Goal setting and action planning in clinical rehabilitation: Development of a theoretically informed practice framework. Clinical Rehabilitation 2011; 25(5) 468–482. Copyright © 2011, SAGE Publications. All rights reserved. http://cre.sagepub.com/content/25/5/468.abstract

Additional File 7.

Patient Interview Schedule: Introduction: You have been involved in goal setting with the Area Rehabilitation Team*. We want to find out what you thought of the goal setting process and if it helped during your rehabilitation.

Areas to be covered include:

1. Experience of G-AP

Patients will be asked to express their views on each stage in the G-AP process and to ground their answers in goals they had worked on. This will include their views on the utility and acceptability of the G-AP process overall and on each component of G-AP, specifically: (Note: Adjust the interview schedule to use language that the patient understand and/or prefer e.g. targets/aims instead of goals.)

a) Goal Negotiation: *Can you talk me through how you identified the areas or problems you wanted to work on?*

b) Goal Setting: *How easy did you find it to come up with goals?*
c) Action Planning and Coping Planning: *How easy did you find it to come up with action plans?; Did your therapist use a scale to find out how confident you were at carrying out your action plan?; Did your plan translate into something you were actually able to do?; Did you think of things that might get in the way of carrying out you action plan?*
d) Appraisal and Feedback: *How easy was it to reflect on what you'd done, and how that tied in with your goal?*

2. Benefits of G-AP

Did the patient experience any benefits associated with their participation in G-AP? If necessary the patient should be asked about the following:
a) The benefits of participating in the G-AP process itself: *Did it help you manage your rehabilitation?*
b) The benefits to their health, in terms of the level of impairment, activity limitations and participation restrictions: *Do you think the G-AP process helped your ability to do the things that are important to you?*
c) What, in their opinion, would improve the benefits they experienced as a result of participating in G-AP: *What, in your opinion, would improve the benefits you experienced from participating in the G-AP process?*

3. Problems associated with G-AP

Did the patient experience any problems associated with their participation in G-AP? If necessary the patient should be asked about the following:
a) Problems associated with their participation in G-AP: *Did you have any problems from using the G-AP?*
b) Any negative consequences on their health, in terms of the level of impairment, activity limitations and participation restrictions?: *Did the taking part in the G-AP process have any negatively effect on you?; Which aspects of G-AP could be changed to reduce or eliminate these problems?*

4. Additional questions

a) How much help or support did you need from the Area Rehab Health professional to go through the whole process?
b) Would you be able to go through the process yourself now, to set your own goals?
c) How many therapists were involved with you?
d) Did they all goal set with you?
e) How useful did you find the patient folder and paperwork?
f) Was it helpful for others working with you from out-with the Area Rehabilitation Team?

* Now known as ReACH Team

Additional file 8.

Health professional interview guide

Introduction

You have been involved in delivering goal setting with the Area Rehabilitation Team with patients recovering from stroke. We want to find out what you think of the Goal Setting process generally and more specifically your experiences with it thinking about specific goals you have worked on with patients. We want to know your opinions on how it works in practice.

1. ***Goal negotiation***
   - How easy did you find it to do this with patients (there is quiet a skill to this)?
   - Do you think some patients are better at doing it than others? Why?
   - How easy was it for patients to establish their problems and where they want to get to?
2. ***Goal setting***
   - How easily did the patient establish specific goals?
   - Were they realistic in your opinion?
   - How much guiding did you need to do?
3. ***Action and coping planning***
   - How easy was it for the patients to decide how they were going to achieve their goal?
   - How much guiding did you need to do?
   - Was it realistic in your opinion?
4. ***Appraisal and feedback***
   - How realistic were patients in their achievements (or failures)?
   - How successful were they?
   - How did they react to success and/ or lack of success when pursuing goals?
5. ***What elements of the G-AP are effective (if any)?***
   - In what way do you feel the G-AP works well?
6. ***What elements of the G-AP are ineffective (if any)?***
   - In what way do you feel the G-AP doesn't work well?

7. Other Questions

- Where does it come in your priorities?
- How much is time an issue?
- What other pressures are on you?
- Do you find the G-AP a pressure?
- Do you think some professionals are better at it? Why?
- Does the G-AP paperwork work?
- How easy is it to capture the on-going goal setting?
- Does the goal setting meeting work?
- Do you think there is a net benefit from doing the G-AP?

Close the interview; thank the participant for their participation in the project.

Additional file 9: Data Extraction Matrix

Anonymised Patient ID:			
Question	**yes**	**no**	**comments**
Was there evidence of goal negotiation?			
Were specific goals set by the health professionals involved?			
Was a predicted outcome date set in relation to the goal?			
Were action plans set in relation to goals?			
Were coping plans set in relation to action plans?			
Was confidence measured in relation to action plans?			
Was performance appraised and feedback given?			
Were subsequent goals set?			
Any other relevant information?			

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RESEARCH PAPER

Goal setting practice in services delivering community-based stroke rehabilitation: a United Kingdom (UK) wide survey

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Abstract

Purpose: We investigated the nature of services providing community-based stroke rehabilitation across the UK, and goal setting practice used within them, to inform evaluation of a goal setting and action planning (G-AP) framework. *Methods*: We designed, piloted and electronically distributed a survey to health professionals working in community-based stroke rehabilitation settings across the UK. We optimised recruitment using a multi-faceted strategy. *Results*: Responses were analysed from 437 services. Services size, composition and input was highly variable; however, most were multi-disciplinary (82%; $n = 335/407$) and provided input to a mixed diagnostic group of patients (71%; $n = 312/437$). Ninety one percent of services ($n = 358/395$) reported setting goals with ''all'' or ''most'' stroke survivors. Seventeen percent ($n = 65/380$) reported that no methods were used to guide goal setting practice; 47% ($n = 148/315$) reported use of informal methods only. Goal setting practice varied, e.g. 98% of services ($n = 362/369$) reported routinely asking patients about goal priorities; 39% ($n = 141/360$) reported routinely providing patients with a copy of their goals. *Conclusions*: Goal setting is embedded within community-based stroke rehabilitation; however, practice varies and is potentially sub-optimal. Further evaluation of the G-AP framework is warranted to inform optimal practice. Evaluation design will take account of the diverse service models that exist.

➤ Implications for Rehabilitation

- Community-based stroke rehabilitation services across the UK are diverse and tend to see a mixed diagnostic group of patients.
- Goal setting is implemented routinely within community-based stroke rehabilitation services; however, practice is variable and potentially sub-optimal.
- Further evaluation of the G-AP framework is warranted to assess its effectiveness in practice.

Keywords

Goals, rehabilitation, stroke, survey

History

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Background

Goal setting is considered ''best practice'' in stroke rehabilitation [1–3]; however, to date, no randomised controlled trials have been completed to demonstrate that goal setting makes a unique contribution to stroke survivors' rehabilitation outcomes [4]. This is not surprising as goal setting studies typically have weak methodological designs with poorly defined interventions that have little or no theoretical underpinning [4–6]. In addition, the interaction between goal setting interventions and the context in which they are delivered is rarely considered; this is an important oversight if we are to understand how to optimise the implementation and adoption of goal setting interventions in practice [7,8]. The difficulties of designing a controlled trial of goal setting that is both methodologically sound and sufficiently powered to demonstrate an effect that have been documented [9].

Addressing this evidence-practice gap has been the impetus behind our programme of research to develop and evaluate a goal setting and action planning (G-AP) practice framework. The G-AP framework guides health professionals through an optimal goal setting process with stroke survivors living in the community. It is evidence and theory based [10] and has four key stages: (i) goal negotiation and setting; (ii) planning and measuring confidence; (iii) action; and (iv) appraisal, feedback and decision making [11,12]. G-AP shows promise as an acceptable and feasible framework for use in community-based stroke rehabilitation [12]. The next stage is to evaluate the effectiveness of G-AP when compared to ''usual'' goal setting practice.

In line with the Medical Research Council guidelines for the development and evaluation of complex interventions [13], we

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sought to understand both the context of services that could deliver G-AP and what ''usual'' goal setting practice looks like in these settings. This is important for two reasons. First, the interplay between an intervention and the context in which it is delivered influences how the intervention is implemented and whether it is successful or not [14]. Pre-emptive consideration of this interplay highlights potential challenges that can be addressed during intervention development and evaluation [7]. For example, development and evaluation of an oral health care intervention in stroke care settings was informed by a survey which found that use of oral health care protocols was sporadic, staff training in oral health care limited and equipment (such as tooth brushes) often not available [15]. These findings confirmed the need for development and evaluation of an oral health care intervention. A training component and access to oral health care equipment was included within the intervention and a staff oral health care knowledge questionnaire added to the outcome measures used in its evaluation [16]. Second, understanding ''usual'' goal setting practice (and variability in practice) allows investigation of the critical differences between G-AP and ''usual'' goal setting practice, what difference G-AP is likely to make over and above usual practice and how ''usual'' practice can be built on, or re-shaped, to put G-AP in place.

Enderby and Wade [17] investigated community rehabilitation services in the UK. They reported ''huge variation'' between services in terms of their service model, management arrangements, composition, goals and life span of the service. Holliday et al. [18] investigated goal setting methods used in community and in-patient rehabilitation settings in the UK. They reported that goal setting was used routinely in practice with a problem-orientated approach to goal setting most commonly reported. The majority of services elicited some degree of patient participation in the process. Whist informative, these surveys were relatively small (98 service responses in the former; 202 responses in the latter); are not current and did not focus on the details of goal setting practice in community-based stroke rehabilitation services. In short, we did not have the information required to inform further G-AP evaluation. To address this knowledge gap, we conducted a UK wide survey of goal setting practice in community-based stroke rehabilitation settings. The survey aimed to investigate:

(1) The structure and nature of services providing community-based stroke rehabilitation across the UK.
(2) What goal setting practice is in these settings, including reasons for non-use.

Methods

Study design

A bespoke electronic survey questionnaire was designed using Survey Monkey® to capture the required information at a national level (a copy of the survey is available on request from the first author). Development of the survey was informed by previous literature in this field [11,17–19]. The questionnaire covered five main topic areas: (i) the service profile (e.g. type, size, patient demographics, rehabilitation input provided), (ii) structures in place to support goal setting practice (e.g. goal setting meetings, documentation and methods used to guide practice), (iii) activities that comprised goal setting practice (which included goal setting activities included in the G-AP framework), (iv) priority given to goal setting, patient/carer involvement and inclusion of people with communication/cognitive difficulties and (v) reasons for non-use of goal setting (if applicable). The survey was subject to a piloting phase over a four-month period with health professionals ($n = 12$) working in community rehabilitation settings and academics ($n = 10$) with expertise in survey methods. Each expert was asked to review the electronic survey (including the study information sheet) and comment on the overall style and appeal of the survey, the relevance and clarity of each question, ease of navigation and time taken to complete. Feedback was provided to LS who iteratively revised the survey through three cycles of expert review and feedback.

Service inclusion/exclusion criteria

All services providing community-based rehabilitation to stroke survivors (either exclusively or with other diagnostic groups) living in the community were eligible to participate in the survey. In-patient services were excluded as were community-based services that did not provide services to stroke survivors.

Service recruitment strategy

As there is no centrally held list of community rehabilitation services in the UK, a three-pronged strategy was used to optimise team recruitment. Firstly, services across the UK were identified through various rehabilitation networks (such as The Community Therapists Network) and Allied Health Professions' special interest groups (such as the College of Occupational Therapists specialist section for neurological practice). This approach was an extension of that used in previous surveys of this nature [17,18]. Secondly, rehabilitation coordinators and/or allied health professional leads in all 14 Scottish health boards were e-mailed and asked to provide a contact name and e-mail address for each community rehabilitation service manager or service lead in their area. Finally, a request to participate in the survey was included in presentations given by LS at two national UK conferences. A study information sheet and link to the electronic survey was e-mailed to each identified contact.

Survey respondents were asked to complete the on-line survey on behalf of their service. Due to the multi-faceted recruitment strategy, we anticipated that more than one health professional from an individual service could be invited to participate in the study. To identify multiple responses from the same service, respondents were asked (but not required) to state the name of their service and the town or city it was located in.

Ethics and research and development approvals

National Health Service research ethics committee approval was not required as the survey was to be completed by staff recruited on the basis of their professional role. Ethical approval was provided by The School of Nursing, Midwifery and Health Research Ethics Committee at the University of Stirling. Research and development approval was provided by individual health boards or trusts within Scotland, Wales and Northern Ireland but was not required for English sites.

Data collection and analysis

The survey was electronically distributed in June 2012 and data collected over a four-week period. Two reminders were e-mailed within the response period. Following data collection, data were downloaded from Survey Monkey® in an Excel format then imported into the Statistical Package for the Social Sciences (SPSS Version 19.0, IBM Corp, Armonk NY). Data were analysed using descriptive statistics. Responses to open-ended questions were categorised, counted and ranked.

Results

Response rate

A total of 573 health professionals responded to the survey. Forty-one responses were removed as they represented in-patient

Table 1. Characteristics of services providing community-based stroke rehabilitation.

Service characteristic	Number[a]	% of services
Service type	**427**	
Community rehabilitation team[b]	152	36
Early supported discharge team[c]	51	12
Combined community rehabilitation and early supported discharge team	72	17
Bespoke team	50	11
Hospital-based outreach team	25	6
Reablement team[d]	21	5
Other team type (including Intermediate care teams[e]; specialist stroke nurse teams, community neurology teams, private teams, adult acquired speech and language therapy teams; stroke orthoptic team, domiciliary occupational therapy and physiotherapy teams)	56	13
Multidisciplinary or unidisciplinary	**407**	
Multidisciplinary	335	82
Unidisciplinary	72	18
Health professionals represented in multidisciplinary services	**407**	
Physiotherapy	348	85
Occupational Therapy	344	84
Rehabilitation Assistant	284	70
Speech and Language Therapy	259	64
Nurse	177	44
Dietitian	104	26
Psychologist	97	24
Social Worker	80	20
Doctor	78	19
Other health professionals (including case managers, mental health practitioners, podiatrists, social care workers, pharmacists & orthoptists)	91	22
Types of unidisciplinary services	**72**	
Speech and language therapy service	25	35
Physiotherapy service	20	28
Occupational Therapy service	17	24
Other unidisciplinary service (including nurse, dietetic, orthoptic, psychology, podiatry)	10	13
Number of health professionals represented in service (full or part time and including rehabilitation assistants)	**400**	
2–4	79	20
5–17	237	59
18 or more	84	21
Diagnosis of patients seen	**437**	
Mixed (stroke patients and other diagnostic groups)	312	71
Stroke patients only	125	29
Age range of patients seen	**426**	
Under 65 years	57	13
Over 65 years	113	27
Below and above 65 years	256	60
Approximate duration of service input	**390**	
0–4 weeks	16	4
5–12 weeks	206	53
13–21 weeks	104	27
22 weeks or more	64	16
Maximum sessions provided per week	**391**	
1 session or less	5	1
2–5 sessions	277	71
More than 5 sessions	109	28
Where are patients usually seen?	**433**	
Patient's own home	361	83
Other location (Outpatient clinics or gyms, health centres, community centres, day hospitals and the workplace)	72	17

[a]Number of services that responded to each question.
[b]Community Rehabilitation Team – typically multi-disciplinary teams working together to provide co-ordinated rehabilitation to people living in the community.
[c]Early Supported Discharge Team – services that offer selected stroke patients an early discharge from hospital with more rehabilitation at home [23].
[d]Reablement team – service designed to prevent hospital admission or post-hospital transfer to long–term care or to reduce the level of on-going home care support required [39].
[e]Intermediate care team – layer of care (mainly targeted at older people) between primary care and specialist services to prevent unnecessary hospital admission, support early discharge and reduce the need for long-term residential care [40].

services. The remaining 532 responses were examined to identify multiple responses from the same service. Three hundred and eighty-two single service responses were identified and 150 multiple responses from 55 services. We aggregated data (using the mode response from each question) from multiple responses to create a single service response. Data were treated as missing in questions where no mode response was available (i.e. equal number of respondents from the same service gave a different response to a given question). Following this process, 437 individual service responses were identified and included in the analysis. Of these, 359 (82%) were complete and 78 (18%) incomplete. Sixty-four percent ($n = 279$) of services represented in the survey were from England; 27% ($n = 118$) from Scotland; 7% ($n = 31$) from Wales and 2% ($n = 9$) from Northern Ireland. Due to the multi-faceted, overlapping nature of the search strategy used to identify services, it is impossible to estimate recruitment rates; however, this is an excellent number of responses when compared to previous surveys of a similar nature [17,18].

Structure and nature of services providing community-based stroke rehabilitation across the UK

The characteristics of community-based stroke rehabilitation services are presented in Table 1. Most services reported that they were Early Supported Discharge Teams, Community Rehabilitation Teams or a combination of the two. Some health professionals (such as those who worked in specialist services or in remote areas) reported they created ''bespoke'' services with other health professionals on the basis of individual patient need. Services were highly variable in terms of their size, composition and the input they provide. The majority were multidisciplinary and included physiotherapists, occupational therapists and rehabilitation assistants. Typically, patients were seen their own home. The majority of services reported that input was provided for 5 to 12 weeks and for between two and five sessions a week. Most services saw a mixed diagnostic group of patients, both below and above 65 years of age.

Reported goal setting practice and reasons for non-use

Ninety-one percent ($n = 358/395$) of services reported that goal setting was used with *all* or *most* stroke patients; a further 8% ($n = 33/395$) reported that goal setting was used with *some* patients. Four services (1%) reported they did not use goal setting with any stroke patients. Reasons reported for non-use were: goal setting is not a valued activity within the service (Community Rehabilitation Team, Scotland); patients not able to participate in the goal-setting process (Bespoke team, Scotland; Bespoke Team, England); goal setting is too time consuming, not possible due to short duration of team input, team members lack confidence in their goal-setting skills and have not received adequate goal-setting training (Community Health and Social Care team, Northern Ireland).

Structures in place to support goal-setting practice

Goal setting method(s) used: Seventeen percent of services ($n = 65/380$) reported that no methods were used to guide goal-setting practice. The remaining 83% ($n = 315/380$) of services reported use of one or more formal and/or informal methods to guide practice (Table 2).

Informal methods included the service using its own method or individual health professionals within the service using their own method. The most common formal methods reported by services were Goal Attainment Scaling and the Canadian Occupational Performance Measure. Other reported formal methods used by services included use of Specific Measurable Achievable Relevant Timed (SMART) goals (3%; $n = 11/380$), the East Kent Outcome System (2%; $n = 8/380$), the G-AP framework (2%; $n = 6/380$) and Malcomess Care Aims (1%; $n = 5/380$).

Data were aggregated within services into either: (i) formal methods only (Goal Attainment Scaling and/or Canadian Occupational Performance Measure and/or or other formal method); (ii) informal methods only (health professional or service used own method and/or other informal method) or a (iii) combination of informal and formal methods. Forty-seven percent ($n = 148/315$) of services reported use of informal methods only, 31% ($n = 98/315$) reported use of formal methods only and 22% ($n = 69/315$) a combination of formal and informal methods.

Goal setting meetings, documentation and training: Sixty percent ($n = 230/382$) of services reported they met to discuss patients' goals once a week or more and 29% ($n = 111/382$) less than once a week; 11% ($n = 41/382$) reported that they never met to discuss patients' goals. The majority of services (83%; $n = 305/367$) reported that they routinely documented goal setting activities; only one service reported never documenting goal setting activities. Fifty percent ($n = 195/388$) of services reported that *most* or *some* of their team members had participated in goal setting training; 32% ($n = 122/388$) reported that *no* team members had participated in training and 18% ($n = 71/388$) did not know.

Priority levels for goal setting and patient/carer involvement in the process

Respondents were asked to rate their service's priority levels in relation to setting rehabilitation goals and involving patients (including those with cognitive or communication difficulties) and carers in the process. The vast majority reported that setting goals and involving patients (with or without cognitive/communication difficulties) was a high priority (Table 3). Involving carers was rated as a high priority for fewer services. The vast majority of services reported they set goals *with* the patient in one or more of the following ways: team set goals with the patient

Table 2. Methods used to guide goal-setting practice.

Methods (based on responses from 315 services)	Number of services	Percentage of services
Goal Attainment Scaling	96	30%
Canadian Occupational Performance measure	63	20%
Goal setting and action planning (G-AP) framework	6	2%
Team members use own methods	140	44%
Team developed own method	92	29%
Other method used	49	16%

96 services (25%) reported use of two or more methods.

Table 3. Reported service priority levels.

	Respondents reports of service priority levels % (*n*)			
Priority area (number of respondents)	Low	Moderate	High	Don't know
Setting rehabilitation goals (372)	2% (7)	13% (47)	84% (314)	1% (4)
Involving patients (369)	1% (3)	9% (33)	89% (330)	1% (3)
Involving carers (363)	5% (17)	40% (145)	54% (195)	1% (5)
Involving patients with cognitive/communication difficulties (372)	2% (7)	15% (56)	81% (299)	1% (5)

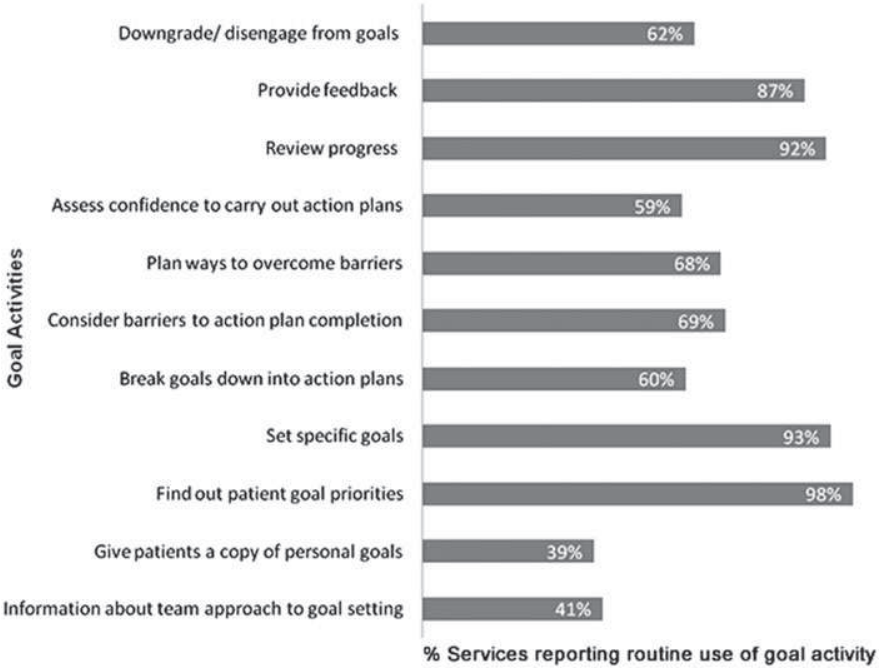

Figure 1. Reported routine use of specific goal-related activities.

($n = 107/366$; 29%); individual team members set goals with the patient ($n = 254/366$; 69%) or one team member set goals with the patient on behalf of the team ($n = 57/366$; 16%). Only 6% ($n = 23/366$) of services reported that they set goals as a team *without* the patient present.

Reported use of goal setting activities

Reports of goal setting activities used within services indicated that some goal-related activities were implemented more routinely than others (Figure 1: Reported use of goal setting activities). Over 90% of respondents reported that their team routinely: found out about patients' goal priorities ($n = 362/369$); set specific goals to direct rehabilitation input ($n = 343/370$); reviewed goal progress ($n = 342/371$) and (to a slightly lesser extent) provided feedback to patients about their goal progress ($n = 319/368$).

Goal activities that appear to be less well established in practice with 59 to 70% of respondents reporting their routine use were: breaking down goals in action plans (or short term targets) ($n = 216/359$); assessing confidence to complete action plans ($n = 212/360$); identifying barriers that might hinder action plan completion ($n = 250/361$); planning ways to overcome barriers ($n = 245/360$) and downgrading or disengaging from goals if no progress is being made ($n = 222/359$).

The goal-related activities reported to be least well established in practice, with less than 40% of respondents reporting their routine use were: giving patients information about the team's approach to goal setting ($n = 147/359$) and giving patients a copy of their personal goals ($n = 141/360$).

Discussion

This study investigated the nature of services providing community-based stroke rehabilitation across the UK and goal-setting practice used within them (including reasons for non-use) to inform evaluation of the G-AP framework. These aims were met through this survey which had excellent coverage and response at a national level. Our findings are discussed under the headings of service contexts and reported goal-setting practice. The implications for G-AP evaluation are highlighted.

Service contexts

The survey responses show that, whilst commonalities exist in community-based stroke rehabilitation across the UK, individual services are complex and can differ in terms of their profile, the duration and intensity of input they provide and the structures and processes in place to support goal setting practice (Figure 2).

Variability in community rehabilitation services have been noted in previous studies [17,20,21]. We report two novel findings. First, whilst there is consensus that specialist stroke services are the optimal approach for hospital-based acute stroke care [22], services providing community-based stroke rehabilitation tend not to be stroke specific. Most services see a mixed diagnostic group of patients, including stroke survivors. Second, Early Supported Discharge teams, Reablement teams and Intermediate Care teams have emerged as new models of service delivery in the UK. This may be in response to the evidence base indicating the benefits of early supported discharge with a selected group of stroke survivors [23] and the UK policy initiatives to support people at home rather than in hospital [24,25]. The dynamic and changing nature of community rehabilitation contexts is likely to continue. For example, current policy initiatives in the UK are focusing on the integration of health and social care [26,27] which will influence how, where and by whom community rehabilitation is delivered to stroke survivors in the future.

Reported goal-setting practice

The vast majority of respondents reported that their service used goal setting with all or most stroke survivors; that goal setting was a high priority, that goal-related activities were routinely documented and that goal review meetings took place on a weekly basis. This reported commitment to goal setting in practice is encouraging and in keeping with the recommended use of goal setting across stroke clinical guidelines in the UK [2,3,28]. However, our findings highlight important issues relating to the quality and delivery of goal setting in practice.

Patient involvement

The majority of services reported that they set goals *with* patients and that involving patients in the process (including

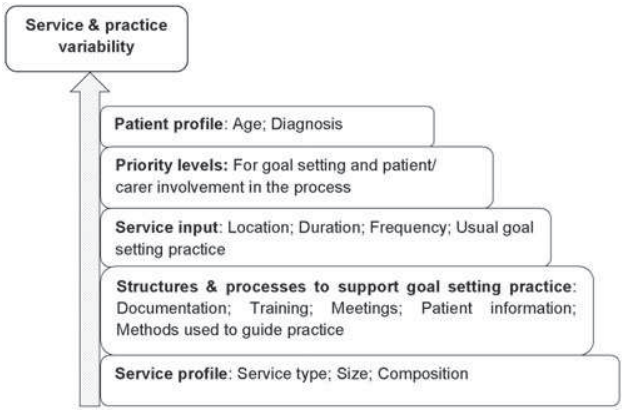

Figure 2. Layers of complexity within services.

those with communication and/or cognitive deficits) was a high priority. In contrast to this, and reflecting the findings of a previous survey [18], most services reported they did not routinely provide patients with information about the team approach to goal setting or give patients a copy of their personal goals. Two recent systematic reviews have shown that patients want to be involved in the goal-setting process, but are often unclear about their role in the process and feel that they have no control over the goals [4,6]. Patients may be more likely to participate in the goal-setting process if they are clear about what the process is (or even that it exists) and how they can contribute to it. Whilst some stroke survivors will have agreed their goals and remember what they are over the course of their rehabilitation, others (such as those with cognitive or communication difficulties) may not. An accessible copy of rehabilitation goals may promote a sense of ownership and control over personal goals for these patient groups.

Variable and potentially sub-optimal practice

Service responses suggest that there is a high level of variability in the methods used to guide goal-setting practice. Some services do not use any methods to guide goal-setting practice, others use their own methods. Formal methods (either used exclusively or in combination with the services' own methods) are evident in practice, the most common being Goal Attainment Scaling [29] and the Canadian Occupational Performance Measure [30]. The goal related activities that comprise ''usual'' goal setting practice also varies. The most common reported goal-related activities are congruent with some of those included in the G-AP framework: identifying patient priorities; setting specific rehabilitation goals, reviewing progress and providing feedback. Activities included within the G-AP framework that are less evident in practice are: - breaking down goals into action plans (or steps); identifying barriers to action plan completion; planning ways to overcome anticipated barriers; assessing confidence to complete plans and downgrading or disengaging from unattainable goals.

This noted variability in goal setting methods and practice suggests that a comprehensive, systematic approach to practice may be lacking. Use of Goal Attainment Scaling and the Canadian Occupational Performance Measure may address this issue to some extent. Both methods are clearly described and (in different ways) offer a standard approach to identifying patient-centred goals and measuring goal-related progress. However, they do not guide health professionals through all stages of the goal-setting process [31]. The G-AP framework includes, (i) a patient-centred planning stage (which details goal-related activities that will optimise patients' behaviour as they pursue their personal goals) and (ii) an appraisal, feedback and decision-making stage (which informs practice following goal-related successes, setbacks and failures) [10–12]. These activities are not explicitly stated in other approaches to goal-setting practice. These findings support our view that whilst G-AP and ''usual'' practice will (to differing degrees) share commonalities, there are critical differences. These differences have the potential to improve patient outcomes by optimising goal attainment and/or facilitating goal adjustments or disengagement if progress is not being made [12,32,33].

Implications G-AP evaluation

There is a strong theoretical rationale and developing evidence base that suggests use of the G-AP framework could enhance goal-setting practice and optimise patients' goal-related outcomes [10–12]. The findings of this survey will be used to decide the best way to approach the next stage of its evaluation. Evaluation of complex interventions is challenging and requires careful consideration of a range of study designs [13]. To minimise the risk of bias, use of a randomised-controlled trial should always be considered when assessing effectiveness of an intervention [13]. Patient-level randomisation is unlikely to be feasible for G-AP evaluation due to the risk of contamination between the intervention and control group. A cluster randomised control trial design reduces this risk, but may require large (and potentially impractical) number of services to create comparable clusters with enough statistical power to detect an effect [34]. A stepped wedge design may be a better solution. Although large number of sites may still be required, their entry into the trial can be staggered which may help with logistical issues, e.g. completing G-AP training in individual services prior to implementation. Additionally, service variability issues may be more effectively managed as each service would act as its own control. Use of this design is becoming more evident in the evaluation of a range health care interventions [35] including goal setting [36]. Alternatively, other non-randomised designs may be preferable. Realist evaluation [37] seeks to determine what works, for whom, under what circumstances. As such, the interplay between intervention and the context in which it is delivered is integral to the evaluation. These, and other, study designs will be fully considered in our next phase of work.

A further consideration is whether G-AP should be evaluated in stroke-specific services, as was our initial intention, or if services that see mixed diagnostic group of patients should be included. On the basis of our results, restricting G-AP to stroke-specific services will significantly limit the number of services in which it can be implemented and evaluated. Including services that see a mixed diagnostic group of patients will increase services available for recruitment and optimise the external validity of the findings. However, this may necessitate further development work to inform optimum implementation of G-AP with other patient groups.

Limitations of this study

Our recruitment strategy maximised reach to health professionals working across the UK in community-based stroke settings. In some cases, however, this resulted in more than one member of the same service responding to the survey. We developed an explicit decision-making framework to identify duplicate service responses (based on team name and location data if available or team location and patient age, diagnosis, usual place of input and core professional groups represented in service data). Whilst we may have missed some duplicate service responses or included service responses as duplicates that were not, we believe our decision-making framework minimised this to a level that did not pose a risk to integrity of our results.

We asked respondents to complete the survey on behalf of their service. Our rationale for this was that goal-setting practice in community-based stroke rehabilitation is a team endeavour organised around patients' personal goals. However, our findings contradict this assumption. Often, goal-setting practice appears to operate at the level of the individual health professional rather than the team. Consequently, responding on behalf of their team may have been problematic for some respondents. Whilst we acknowledge this as a limitation, we were pleased with the high number of completed responses – this suggests that the survey was acceptable to respondents and they felt they could make a meaningful response on behalf of their service.

Finally, the results of this survey are based on health professional reports rather than on observed practice. Other studies have demonstrated that health professional reports of clinical practice can be unreliable and may reflect what ''should'' happen rather than what does happen [38]. The results of this survey should be viewed from this perspective.

Conclusions

This is the largest survey to date of goal-setting practice in services delivering community-based stroke rehabilitation in the UK. The results underline the clinical importance of goal setting with stroke survivors in the community and the complexity of the community rehabilitation services in which it is delivered. Goal-setting practice is highly variable and potentially sub-optimal. A suitably designed evaluation of the G-AP framework is warranted to develop the evidence base to optimise goal-setting practice and patient outcomes in these settings.

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Declaration of interest

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11

Theory-Based Approach to Goal Setting

Lesley Scobbie and Diane Dixon

CONTENTS

11.1 Introduction

We begin this chapter with an overview of what theory is and what it can be used for. We suggest that theory is central to the development of a cumulative evidence base, especially in an area as complex as rehabilitation. However, it is possible to identify numerous theories relevant to rehabilitation in general and goal setting in particular. As a consequence, researchers and practitioners are faced with the problem of selecting a theory or theories

suitable for their particular problem or question. Theory integration may offer a solution to this problem and we discuss recent work on theory integration in relation to goal setting within rehabilitation. We then go on to illustrate the process of theory selection and development by describing, in detail, a programme of work to develop a theory-based goal-setting professional practice framework. This practice framework focuses on stroke rehabilitation in a community setting but the development process is easily transferred across health conditions and settings.

11.2 What Is Theory and Why Is It Important in Rehabilitation?

We all have our own personal theories of how the world works and these theories guide and shape our behaviour, including professional practice. For example, a general practitioner is more likely to refer his or her patients to radiography for x-ray if he or she believes that degeneration of the spine typically plays a causal role in lower back pain, even though the evidence base indicates otherwise (Savigny, Watson, & Underwood, 2009; van den Bosch, Hollingworth, Kinmonth, & Dixon, 2004). These personal theories about the world are often implicit, that is, they are not shared and therefore are not open to scrutiny. Within research and practice, it is usual and useful to make theory explicit so it can be discussed, shared and evaluated.

Very simply then, theory can be considered to be a tool for thinking and doing. Theory provides an explicit and organized description of what is known about a particular phenomenon. Theory identifies and defines both the constituent parts of a system and the processes that relate one part to another. It can also specify the nature of interventions. As a consequence, theory enables us to predict, explain and change the world. It is fundamental to the development of a cumulative evidence base and to evidence-based practice.

11.3 Theory, Rehabilitation and the Concept of Disability

The relationship between theory and rehabilitation is a subject of much debate (Dunn & Elliott, 2008). It has been argued that an integrative theory of rehabilitation is lacking and that a unifying theory would confer benefit on the discipline as a whole, including the work of health professionals and researchers, and improve outcomes for patients (Siegert, McPherson, & Dean, 2005). However, it is also acknowledged that the development of a single unifying theory of rehabilitation poses many challenges, especially in regard to the wide scope required of such a theory. A somewhat boundless theory might risk violating the key requirements of a scientific theory, namely, that it (1) is composed of constructs that have logical consistency, (2) can generate hypotheses that can be empirically tested and (3) is parsimonious and operates within a clearly defined domain (Dekker, 2008). Others have suggested that rehabilitation requires two models, a model of illness and a model of the process of rehabilitation in the context of that model of illness (Wade, 2003). These discussions about theory and rehabilitation should not be taken to indicate that rehabilitation has not benefitted from the use of theory. Multiple theories have been used within

rehabilitation but the focus has tended towards theories or models of disability, rather than on rehabilitation per se.

Multiple theories of disability are available, each of which is informed by how disability is conceptualized. Three conceptualizations of disability dominate the literature: impairment-based models (World Health Organization [WHO], 1980, 2001), social models (Oliver, 1990; Thomas, 2004) and behavioural models (Johnston, 1996). These disability concepts have been used to inform discipline-specific interventions. For example, an orthopaedic consultant would reduce disability associated with osteoarthritis of the hip through total hip replacement surgery, indicating the use of an impairment-based conceptualization of disability. In contrast, a social scientist might advocate for the adoption of equal opportunity legislation for people with disabilities or the redesigning of public transport to enable access by wheelchair users, indicating disability is conceptualized as a consequence of the structure of the social and physical environment. Conceptualizing disability as behaviour may initially seem rather strange. However, disability is typically measured in terms of the ability or inability of an individual to perform particular activities. For example, activities of daily living are measured by instruments such as the Barthel index (Mahoney & Barthel, 1965) and the Functional Independence Measure (Keith, Granger, Hamilton, & Sherwin, 1987). Activities of daily living are behaviours, for example, the ability to go up and down stairs, the ability to walk and the ability to wash your hair; stair climbing, walking and hair washing are discrete behaviours. As a consequence, these behaviours can be modelled by theories of behaviour drawn from psychology. It is the use of the concept of disability as behaviour that is the basis for the use of goal setting within rehabilitation because goals are an important construct within many theories of human behaviour. The use of behavioural theory within rehabilitation is increasingly recognized as an important theoretical tool to further our understanding of the factors that influence outcomes from rehabilitation and to inform intervention design and implementation (Siegert, Mcpherson, & Taylor, 2004; Siegert & Taylor, 2004; Wade, 2006).

11.4 Goal Setting and Rehabilitation

Goal setting is viewed as a core component of rehabilitation interventions (Levack et al., 2006; Scottish Intercollegiate Guidelines Network, 2010; Siegert & Taylor, 2004) and as a core skill of rehabilitation practitioners (Wade, 2000). The development of our understanding of how goals and goal setting operate within rehabilitation requires an appropriate theoretical framework. Locke and Latham's work on the effect of goal setting on performance within occupational settings represents the most comprehensive programme of work on goal setting to date (Locke & Latham, 2002). However, three features of Locke and Latham's approach to goal setting reduce its suitability as a model of goal setting within rehabilitation. First, its focus is to specifically increase task performance rather than goal achievement. Second, this focus does not require goals to be achievable. Third, goal importance is not defined in terms of patient relevance; rather, goal importance can be entirely external to the patient (Playford, Siegert, Levack, & Freeman, 2009). These limitations suggest other theories and models, which may be more relevant to application within a rehabilitation setting, should be considered.

The concept of a goal and goal setting occur in several other theories of behaviour. For example, goals can be found in social cognitive theory (Bandura, 2000), the health action

process approach (Schwarzer, 1992), self-regulation theory (Carver & Scheier, 1981, 1982; Hart & Evans, 2006) and the common-sense self-regulation model (Leventhal, Leventhal, & Contrada, 1998). Further, other theories and models of motivation might also provide a theoretical framework within which goal setting in rehabilitation might be understood (Siegert & Taylor, 2004), for example, self-determination theory (Deci & Ryan, 1985). These social cognition models have often been used to understand health behaviours, such as diet and physical activity (Armitage & Conner, 2000), and outcomes from illness, including disability (Dixon, Johnston, Rowley, & Pollard, 2008; Johnston et al., 2007; Sniehotta, Scholz, & Schwarzer, 2006). Consequently, there is a growing evidence base for their utility in the relevant domain of health behaviour and with relevant (clinical) populations. Social cognition models have also been used to understand health professionals' behaviour and to design interventions to change health professionals' behaviour (Hrisos et al., 2008; Ivers et al., 2010). Thus, social cognition approaches may provide valuable theoretical insights into the role of goals and goal setting within rehabilitation from both patient and practitioner perspectives.

11.5 Identifying Appropriate Theoretical Frameworks for Goal Setting in Rehabilitation

As a result of the lack of a universal theory of rehabilitation and the availability of multiple theories of behaviour concerning the concept of a goal, the researcher or practitioner is faced with the difficult problem of deciding which theory to employ. Ideally, a systematic review of the evidence base should be undertaken to identify the model best suited to a particular problem. However, the predictive utility of a theory varies across behaviours, conditions and situations (Hagger, Chatzisarantis, & Biddle, 2002; Hagger & Orbell, 2003; Milne, Sheeran, & Orbell, 2000), and it is unlikely that any one theory will universally outperform all others. Rather, it is more likely that a review will indicate, at best, several theories that could be used, and unless the scope of the review is tightly focused, the choice of which theory to choose is likely to remain. Faced with the problem of identifying candidate theories for use in the development of a goal-setting practice framework for community rehabilitation in stroke, a recent literature review (by the present authors) focused on theories containing goal-setting concepts that had been used in a clinical context (Scobbie, Wyke, & Dixon, 2009). In this review, it was the explicit use of theory and the situation (clinical context), rather than the health condition (stroke), which was used to structure the review. This review identified 24 relevant studies that used 5 different theories, namely, social cognitive theory, goal-setting theory, health action process approach, proactive coping and the common-sense self-regulation model. Thus, even after a focused literature review, multiple potential theories remained.

Narrowing the scope of any literature review is dependent upon the availability of precise search terms. Unfortunately, there is no agreed standard terminology for goal setting in the rehabilitation literature. Goal setting has variously been described as goal planning, care planning, setting aims and objectives and action planning. Similarly, what constitutes goal setting, that is, what are its component parts, is unclear (Hurn, Kneebone, & Cropley, 2006; Levack et al., 2006; Playford et al., 2009; Wade, 1999). Further, there is not a universally accepted definition of goal setting in rehabilitation practice. The lack of a standard terminology hinders the development of a cumulative evidence base. It is difficult to

structure a search strategy when different terms are used to describe the same underlying phenomenon, and it is especially difficult to determine if all relevant literature has been identified. Further, the content of goal-setting interventions is not always described in detail, making it difficult to ascertain precisely what has been delivered. Fortunately, recent efforts have begun to address these issues in an attempt to develop a consensus in relation to goal setting within neurological rehabilitation (Playford et al., 2009). It would benefit the development of a cumulative evidence base if the rehabilitation community could progress this work to develop clear and agreed definitions of goal setting and to specify the core content of goal setting within rehabilitation.

11.6 Integrating Goal Setting within a Wider Theoretical Framework for Rehabilitation

There is an emerging consensus within behavioural science that the application of a single theory may be limiting and that an approach that integrates across relevant theories may be better suited to understanding the complexity of human health-related behaviours (Hagger, 2009). Much of this work has focused on integrating elements from across different social cognition theories (Armitage, 2009; Gibbons, Houlihan, & Gerrard, 2009; Hagger & Chatzisarantis, 2009; Lippke & Plotnikoff, 2009; Ntoumanis, Edmunds, & Duda, 2009; Sniehotta, 2009), many of which share the same or similar constructs. For example, the concept of self-efficacy was originally developed by Bandura within the framework of social cognitive theory (Bandura, 1997), but it is also a fundamental component of Locke and Latham's work on the role of goals as drivers of performance (Locke & Latham, 2002) and the health action process approach (Schwarzer, 1992) and has been added to other theories to improve their predictive utility (Conner & Armitage, 1998; Hagger & Chatzisarantis, 2005; Prentice-Dunn & Rogers, 1986).

This overlap in content provides a useful basis for integration across social cognition theories. Consider the example earlier of a review that identified social cognitive theory, goal-setting theory, health action process approach, proactive coping and the common-sense self-regulation model as candidate theories for a goal-setting practice framework from community rehabilitation teams (Scobbie et al., 2009). Self-efficacy is a component part of the first four theories and on this basis any integrated theoretical framework should probably include the concept of self-efficacy.

Assuming that constructs that appear in multiple theories are more likely to have predictive utility across behaviours and situations, the process of comparing constructs within candidate theories should identify the key concepts for any integrative theoretical framework. That said, it is important to guard against what has been described as *cafeteria-style research* (Bandura, 2000, p. 299), whereby constructs from multiple similar theories are used to predict behaviour without regard to their original broader conceptual framework. This type of approach is more likely to result in fractionation of the evidence base rather than integration. A theoretical framework for rehabilitation should also consider inclusion of concepts that are theorized to have a causal role in behaviour. Some social cognition models have good predictive utility but may be less useful for the design of interventions to change behaviour because they are not causal models (Hardeman et al., 2002). Importantly, self-efficacy is theorized to be a causal construct and methods are available to increase self-efficacy (Bandura, 1997), for example, chronic disease self-management programmes

employ techniques to increase self-efficacy as the means by which improvements in outcome are achieved (Bodenheimer, Lorig, Holman, & Grumbach, 2002; Marks, Allegrante, & Lorig, 2005). Self-efficacy would therefore appear to be a good candidate for inclusion in any integrated model of rehabilitation.

It could be argued that integrating across theories that share the same or very similar constructs should be quite straightforward. However, the process of rehabilitation, including goal setting, is complex and is likely to require a theoretical framework that is not limited to social cognition theories. This raises the question of whether goal and goal-setting theories from psychology can be integrated with broader models used in rehabilitation.

The International Classification of Functioning, Disability and Health (ICF) is a taxonomy of health outcomes developed by the World Health Organization (2001). It was designed to provide a common language to describe functioning, disability and health (WHO, 2002). For any given health condition, it identifies three health outcome domains – impairments (to body structures and functions), activity limitations and participation restrictions, each of which is clearly defined. It also indicates that contextual factors, in the form of personal and environmental factors, influence each health outcome and the relationships between them. The ICF is now widely used; a recent review of the ICF identified 672 papers that had used the ICF between 2001 and 2009, approximately a quarter of which reported the use of the ICF in clinical or rehabilitation contexts (Cerniauskaite et al., 2011).

However, the ICF was designed as a static taxonomy of health outcomes and has been criticized for neglecting the temporal nature of chronic health conditions (Wade & Halligan, 2003). Goals are a dynamic concept, as they relate to some future state; as a result, any integrative theory will need to be dynamic. That said, two features of the ICF enable its integration with social cognition theories. First, the ICF contains behavioural concepts. Activity limitations are behaviour, and behaviour is a component part of many participation restrictions. Second, social cognition theories can be used to operationalize the personal factors component of the contextual factors construct. The integration of social cognition models and the ICF transforms the ICF into a dynamic process model that identifies beliefs, including goals, as mediators of the relationship between the three health outcome domains. A schematic diagram of such an integrated model is shown in Figure 11.1. Empirical studies have shown that this integrated model is a better predictor of disability than either the ICF or psychological models alone in people awaiting joint

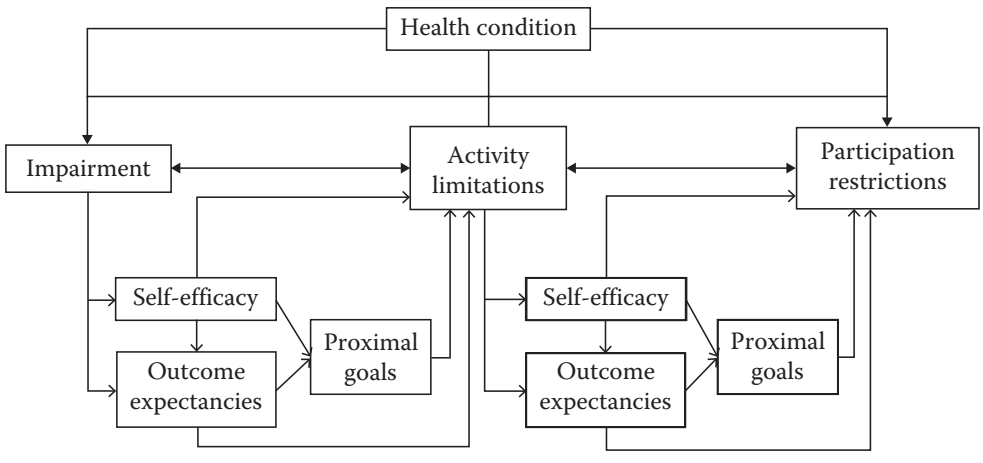

FIGURE 11.1
Integration of social cognitive theory into the ICF.

replacement surgery (Dixon et al., 2008) and in community samples (Dixon, Johnston, Elliott, & Hannaford, 2012).

Consider, for example, a 70-year-old man recovering from a stroke who has a drop foot (impairment). This might affect his confidence (self-efficacy) in his ability to walk in uncertain conditions, such as across rough terrain, or to walk quickly when needed. He might also anticipate that in these situations, he is at increased risk of falling (outcome expectancies) when he walks. He might, therefore, modify his goals of returning to playing golf and of being more active in general (activity limitations). His experience of activity limitations might then affect his involvement in valued social activities (participation restrictions), such as playing with his grandchildren, because he lacks confidence in his functional abilities and anticipates negative outcomes, such as being unable to prevent his grandchild running into the road.

This integrated model is, therefore, suitable for use in multidisciplinary settings because it is able to accommodate those constructs of most importance to both biomedicine (impairments) and social scientists (contextual factors). The model enables interventions at the level of impairment, activity limitations, participation restrictions, beliefs and the environment to be used to improve outcomes. Further, the inclusion of reciprocal relationships between the components of the model also accommodates interventions used by many rehabilitation professionals, for example, exercises (activity) to improve muscle strength (body structure and function).

11.7 Value of Theory to Practice and Patient Outcomes

Goal-setting practice continues to be largely atheoretical, with a *common-sense* approach to implementation rather than practice based on a sound theoretical rationale (Siegert & Taylor, 2004). It is of some concern that the evidence base to support the clinical efficacy of goal setting in rehabilitation is itself not robust (Siegert & Taylor, 2004; Wade, 2005). A recent, systematic review of the effectiveness of setting goals in rehabilitation settings concluded that there is some evidence that goal setting can improve patient adherence to rehabilitation; however, there was no consistent evidence to support its impact on patient outcomes. It was also noted that the quality of much of the evidence base was poor, for example, there was a lack of clarity about the purpose of goal setting which made it difficult to evaluate its effectiveness (Levack et al., 2006).

It has been accepted wisdom that interventions based on theory are likely to be more effective than those that are not (Albarracín et al., 2005; Downing, Jones, Cook, & Bellis, 2006). Whether this is the case for goal setting, interventions in rehabilitation cannot be examined because of the current lack of theoretically based interventions in the area. However, recent developments in behavioural science have begun to demonstrate that this is actually the case for interventions designed to change protective health behaviours. Meta-regression analyses of interventions to change physical activity and dietary behaviours have shown that those based on theory were more effective than those that were not (Michie, Abraham, Whittington, McAteer, & Gupta, 2009). These types of analyses are beginning to generate an evidence base in support of what was formerly simply a shared assumption that theory-based interventions are more effective.

Further, the value of theory has been recognized by the research community through published guidelines for the development of complex interventions (Craig et al., 2008).

These guidelines define best practice and identify a central role for theory, especially in the development and evaluation phases of complex interventions. Of particular importance is the ability of theory to guide and inform the modelling of processes and outcomes prior to a full scale evaluation of any intervention.

11.8 Theory to Practice: A Worked Example

Given the earlier discussion, the translation of theory into practice might seem a daunting prospect. In the next section of this chapter, we describe the development of a theory-based framework to guide goal-setting practice with people recovering from stroke in community rehabilitation settings. The focus of the framework was the practitioners delivering rehabilitation to stroke patients as part of a multidisciplinary team. The aim was to develop a theory-based practice framework to guide the delivery of goal setting so that practitioners would understand the rationale for goal setting and that practice would be optimized and standardized. We conclude the chapter with the recognition that carrying out systematic reviews and redesigning practice from scratch is probably impractical for most rehabilitation professionals and suggest ways in which theory can be used to evaluate and improve current practice.

11.9 Which Theories Should Inform Goal-Setting Practice in the Rehabilitation Setting?

Health professionals working in rehabilitation settings might find it difficult to name theories relevant to their goal-setting practice; this is probably because goal setting has been accepted as something that makes good clinical sense and therefore not in need of a strong theoretical rationale to support it (Siegert et al., 2004; Siegert & Taylor, 2004). However, the absence of a theoretical underpinning to goal-setting practice can lead to clinical uncertainties about what the key components of goal-setting interventions are, what terminology should be used to describe them, how they are likely to impact on patient outcomes and how to adjust the process if progress is not being made.

In addition to this theory–practice gap, there is a lack of evidence to support the impact of goal setting on patient outcomes in the rehabilitation setting. Sugavanam and colleagues (2013) systematically integrated and appraised the evidence for effects and experiences of goal setting in stroke rehabilitation. They concluded that no firm conclusions could be made on the effectiveness, feasibility and acceptability of goal setting in stroke rehabilitation and that further rigorous research was required to strengthen the evidence base. These findings concur with the findings of other studies examining the effectiveness of goal setting in the rehabilitation setting (Levack et al., 2006; Rosewilliam, Roskell, & Pandyan, 2011).

In view of the identified gaps in both evidence and theory, we have argued that goal setting is an important but complex intervention that should be developed and evaluated in a systematic way (Scobbie et al., 2009). The development of a theoretically informed goal-setting practice framework in which the key components and mechanisms of action

are clearly defined should: (1) guide goal-setting practice in a structured and systematic way, providing health professionals with a shared understanding of *what* to do, *how* to go about doing it and *why* they are doing it in a particular way; (2) use terminology and concepts that are understood by the health-care team, patients and carers; and (3) clarify how patients (and carers) can best be involved in the process to optimize goal attainment in areas that reflect *their* priorities. Such a development would facilitate the systematic evaluation of a replicable goal-setting intervention, thus enabling the development of a cumulative evidence base.

The Medical Research Council (MRC) guidance for the development and evaluation of complex interventions (Craig et al., 2008) provides a framework to guide such development. This guidance emphasizes the importance of beginning the development process with the identification of a theoretical rationale to support the intervention. In line with the MRC recommendations, our first step in the development of a practice framework was to conduct a structured review of the rehabilitation and health-related self-management literature to identify those theories of behaviour change that offered the most potential to inform goal-setting practice in rehabilitation settings (Scobbie et al., 2009). We decided to focus on theories of behaviour change on the basis that the rehabilitation process primarily challenges people to change or adjust their behaviour at the level of impairment (e.g. forced use of an affected upper limb to improve motor control), activity (e.g. learning to get in and out of a bath using adaptive equipment) or participation (e.g. practising use of public transport to access the local library).

Our search identified three theories of behaviour change that were chosen on the basis of their capacity to inform goal-related rehabilitation or self-management interventions that had resulted in improved patient outcomes. The three theories were social cognitive theory (Bandura, 1997), health action process approach (Schwarzer, 1992) and goal-setting theory (Locke & Latham, 2002). Further review of these theories identified clear overlapping constructs within them, namely, self-efficacy, outcome expectancies, goal attributes, planning, appraisal and feedback.

Self-efficacy relates to how confident an individual is in their ability to achieve a desired goal in the presence of perceived barriers or facilitators (Bandura, 1997). Bandura (1997) argued that 'unless people believe they can achieve desired effects by their actions, they will have little incentive to act' (Bandura, 1997, p. 2). *Outcome expectancies* are beliefs about what the outcome of performing a particular goal-directed behaviour will be (Bandura, 2000, p. 306). Beliefs about self-efficacy and outcome expectancies operate together and are expected to exert their influence on health outcomes by improving motivation to set and pursue goals (Marks et al., 2005) and to increase resilience in the face of setbacks during goal pursuit (Schwarzer, Ziegelmann, Luszczynska, Scholz, & Lippke, 2008). Consider a person recovering from a stroke who believes they have the ability to dress themselves and that doing so will make them feel better. Social cognitive theory suggests they are more likely to be motivated to pursue that goal than someone who is not confident they can get dressed and believes that doing so will only use up energy they would rather have for other activities they think are more important.

Goal-setting theory has identified goal *specificity* and *difficulty* as the two primary *goal attributes* that will influence goal-related performance. The theory advocates that goals should be proximal and specific as opposed to vague *do your best*-type goals and should be difficult enough to challenge the person without taking them beyond the limits of their ability (Locke & Latham, 2002). The theory suggests that goals exert their influence by directing attention and effort, maximizing persistence and fostering problem solving in relation to the set goal (Locke & Latham, 2002). A goal such as *try to walk as much as you*

can is less likely to be effective than a specific goal such as *aim to walk to the corner shop and back by the end of the month*. The specific goal creates a clear *benchmark* to focus attention on and measure performance against, both of which are important motivational influences.

Planning is about getting beyond the intention to do something, to actually doing it. There are two types of plans: action plans and coping plans. Action plans specify in behavioural terms exactly what has to be done, where it has to be done and when it has to be done. Coping plans encourage the person to think about barriers that may get in the way of carrying out the action plan and proactively think about strategies to overcome those barriers (Sniehotta et al., 2006).

Appraisal is the assessment of performance in carrying out the plan and gauging progress in relation to the goal. *Feedback* is the information provided to the actor (the person recovering from stroke in this case) on the basis of the appraisal of their performance (Locke & Latham, 2002). Appraisal and feedback perform several important functions. Where progress is being made, they motivate continued goal pursuit. If there is a problem with progress or circumstances have changed, they can prompt adjustments to goal-directed behaviour or disengagement from the goal (Maes & Karoly, 2005).

The clinical relevance of these theoretical constructs is clear; health professionals will recognize that confidence or self-efficacy, expectations about outcomes, specifying goals, making plans and giving feedback are all likely to impact on how patients engage in the goal-setting process. However, they are unlikely to have been considered or applied in a structured or standard way during usual goal-setting practice either within or between clinical settings. This probably goes some way to explaining why the practice of setting and achieving rehabilitation goals in the clinical setting is highly variable (Holliday, Antoun, & Playford, 2005; Levack et al., 2006; Playford et al., 2009) and often problematic (Borell, Daniels, & Winding, 2002; Parry, 2004).

11.10 How Can Theoretical Constructs Be Mapped onto the Goal-Setting Process?

Our next task was to consider how these theoretical constructs could inform clinical practice on a day-to-day basis. The MRC framework recommends Hardeman et al.'s causal modelling approach as one way of linking theory to health outcomes in complex interventions that are designed to promote behaviour change (Hardeman et al., 2005). A causal model can be thought of as a hypothetical process through which theory is used to identify the factors that determine behaviour change. We used the causal modelling approach to: (1) identify the factors likely to influence patients' motivation to pursue goals, (2) identify the behaviour(s) the goal should target and (3) consider the likely impact of a change in these behaviours on health outcomes.

The causal model also identifies the variables that are expected to mediate the relationship between the target behaviour and health outcomes. In other words, if a patient engages in the target behaviour, for example, practising climbing stairs, the causal model specifies how performing that behaviour will influence health outcomes, for example, improved functional outcomes. The causal modelling approach is useful for developing a practice framework because it identifies the points during the goal-setting process where health professionals can intervene with specific techniques to promote behaviour change.

The developed goal-setting causal model is outlined in Figure 11.2. It is important to consider what the practice implications of the causal model are – these can be summarized as follows:

- Self-efficacy, outcome expectancies, goal specificity and difficulty and planning will influence patients' goal-related behaviour.
- The behaviours targeted during the goal-setting process can be conceptualized in terms of the ICF functional levels of impairment, activity and participation.
- Successfully engaging in target behaviours is predicted to lead to incremental functional improvements at the level of impairment, activity or participation and enhanced self-efficacy.
- Health professionals can enhance patients' self-efficacy at intervention points by:
  - Setting plans that will optimize their chances of success (*mastery experience*)
  - Providing credible encouragement and positive feedback (*verbal persuasion*)
  - Highlighting other people in similar circumstances who have been able to achieve success (*vicarious experience*)
  - Helping their patients to correctly interpret their physical and/or emotional responses during tasks, for example, reassuring them it is natural to feel anxious the first time they try something new (*re-interpretation of physiological symptoms*)
- The cumulative effect of incremental functional improvements and enhanced self-efficacy is predicted to result in a measurable improvement in goal attainment and rehabilitation outcomes.

The causal model clearly identifies four intervention points where health professionals can act to influence and optimize behaviour change by: (1) facilitating the development of goal intentions, (2) identifying a specific goal to work on, (3) breaking this goal down into action plans with coping plans in place if barriers to action plan attainment are anticipated and (4) appraising performance and giving feedback. Strategies to enhance self-efficacy are included within all intervention points. It is also acknowledged within the causal model that goals and action plans may be assigned or self-set. The theoretical justification for this is found within goal-setting theory, which states that assigned goals do not reduce performance as long as the actor (in this case the patient) understands the rationale behind the goal and agrees that pursuing it is likely to result in a good outcome for them (Locke & Latham, 2002). Overall, the causal model makes an explicit link for health professionals between theory, practice and outcomes.

11.11 Developing a G-AP Framework for Clinical Practice

A multidisciplinary task group was set up within a community rehabilitation team in Scotland (*Re*habilitation *a*t Community and *H*ome (ReACH) Team) to explore how the goal-setting causal model could be applied in clinical practice (Scobbie, Dixon, & Wyke, 2011). The *workability* of each intervention point of the causal model was assessed by hypothetically applying it to case studies of patients currently seen by the team.

FIGURE 11.2
Goal-setting causal model with intervention points and behaviour change techniques. (From Scobbie, L. et al., *Clin. Rehabil.*, 25(5), 468, 2011.)

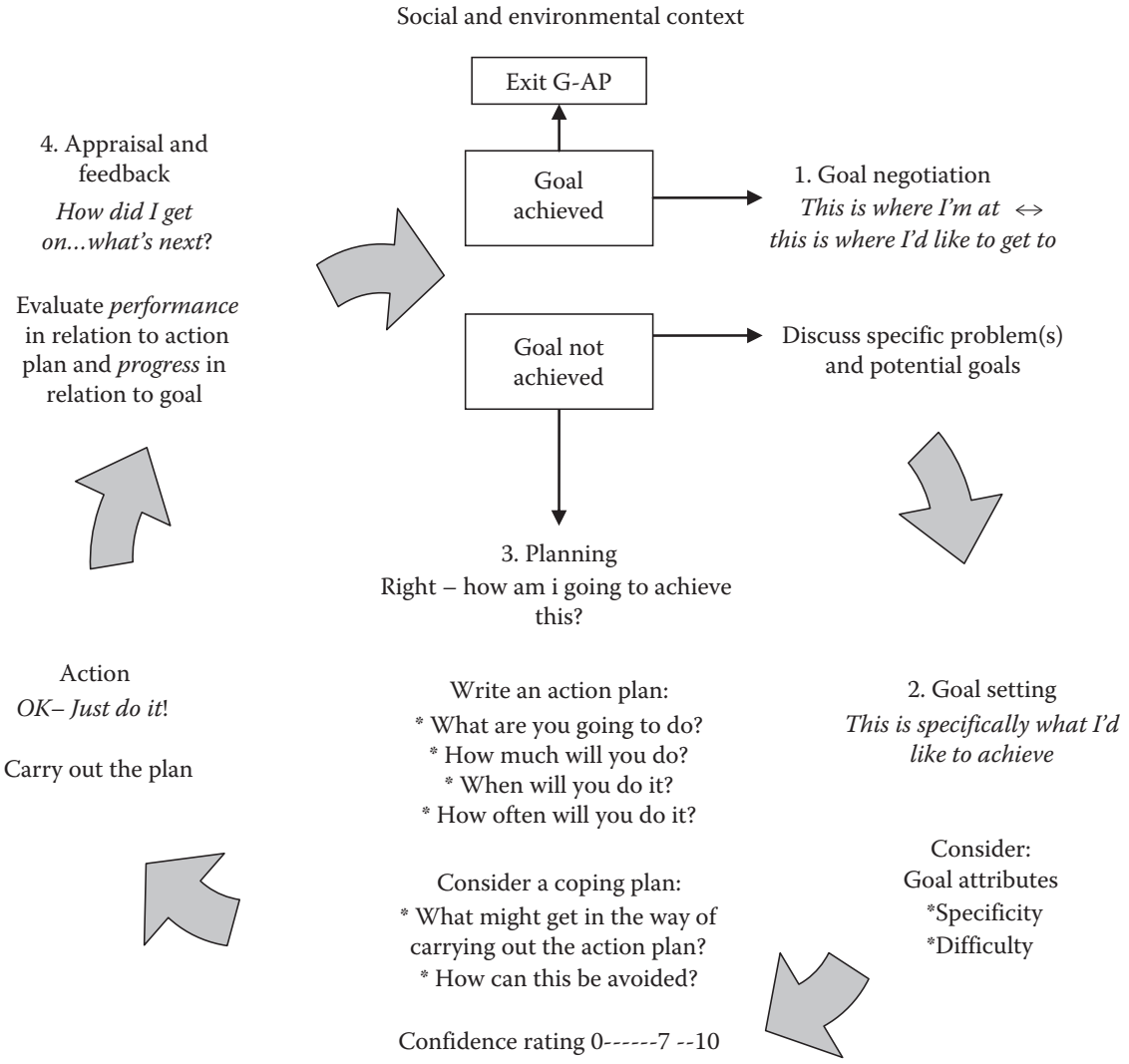

FIGURE 11.3
G-AP framework. (From Scobbie, L. et al, *Clin. Rehabil.*, 25(5), 468, 2011.)

These discussions resulted in the linear goal-setting causal model being translated into a circular goal setting and action planning (G-AP) practice framework (see Figure 11.3).

In keeping with the causal model, the task group used the ICF (World Health Organization, 2001) alongside the G-AP framework to consider and set goals and action plans at the level of *impairment* (e.g. to improve breath control), *activity* (e.g. to dress independently) or *participation* (e.g. to use public transport to get to work) and to acknowledge the importance of considering contextual factors, that is, the patient's physical and social environment and relevant personal factors (such as coping styles) at each stage of the goal-setting process.

The G-AP framework was then iteratively applied to patients currently receiving rehabilitation services from task group members. The task group discussed the use of the G-AP framework with each patient in turn and reported on the *clinical usefulness* of each of the four intervention points and related behaviour change techniques specified in the causal model, the *feasibility* of implementing the components of the causal model and whether implementation of the causal model was *acceptable* to patients and their carers. These discussions resulted in further refinement of the G-AP framework and development of guidelines for its implementation in clinical practice.

The G-AP framework is designed to support health professionals, patients and carers through a collaborative G-AP process, acknowledging the experience and expertise that each brings to the process. This is important for two reasons. First, the theoretical constructs underpinning the framework, that is, self-efficacy, outcome expectancies, goal attributes, planning, appraisal and feedback, all need to be considered in relation to the patient and their life circumstances. How confident are the patients that they can achieve this goal? Do they believe it will result in a good outcome for them? Is the goal important to them? Will the goal challenge them without taking them beyond their potential? Are they confident they can carry out the action plans and coping plans? How do they think they are doing in relation to completing action plans and achieving their goal? What do they think the next step should be? If patients are not explicitly involved, the motivational potential of each stage of the G-AP process is at best compromised and at worst lost. Second, there is a strong value embedded within health-care policy in the United Kingdom that practitioners should work in partnership with patients and carers to create a shared responsibility for improving health outcomes (Department of Health, 2009; Scottish Executive, 2007). The G-AP framework creates an ideal opportunity for partnership working through the process of setting and working towards agreed goals within a specific time frame (Playford et al., 2009).

11.12 Four Stages of the G-AP Framework

11.12.1 Stage 1: Goal Negotiation

This stage focuses on developing goal intentions. First, patients are encouraged to consider their current situation – both things that are going well and not so well – and identify the main problems they want to address. Goals are more likely to be considered by patients if they have some confidence they can achieve them (self-efficacy), and they believe that achieving them will result in a positive outcome for them (positive outcome expectancies). Goal ideas can be suggested by the health professional and/or the patient (or carer) and discussed between them.

Outcome of this stage: The health professional and patient will agree on the general problem areas/goal(s) that will focus discussion in the next stage, for example, *I want to be able to talk better* or *I want to use my right arm more* or *I want to be able to get out of the house a bit more*.

11.12.2 Stage 2: Setting a Specific Goal

In this stage, the general goal is refined into a specific, challenging goal that will clarify for both the health professional and the patient what they are aiming for. Both should view the goal as important and worth pursuing. Setting a specific goal requires the health professional and patient to make an informed approximation about a future endpoint on the basis of the knowledge and expertise that each has at that particular time. As a consequence, this goal will be SMART*ish*, that is, *s*pecific, *m*easurable, *a*chievable, *r*elevant and *t*imed as it can be with the information currently available.

Outcome of this stage: The health professional and patient will agree on specific goal(s), for example, *I will be confident talking on the telephone to my friends* or *I will be able to use my right hand to sign my name* or *I will be able to take the dog for a walk to the local park on my own*.

11.12.3 Stage 3: Action Planning and Coping Planning

Action plans act as incremental *stepping stones* towards goal achievement, and coping plans prepare for barriers that might get in the way. Together, they work to activate and sustain goal-related behaviour. The action plan should detail, in behavioural terms, *what* has to be done, *when*, *where* and *how* often. It is an immediate plan that serves as a tangible focus in the here and now. Consequently, action plans do need to meet the *SMART* rule; they are *s*pecific (detail exactly what the patient has to do), *m*easurable (success of completion easily assessed), *a*chievable (represents the next incremental step, therefore should be highly achievable), *r*elevant (set in the current patient context) with a *t*ime frame (should be achievable in the immediate future; days not weeks).

A simple patient-report measure of self-efficacy using a 10-point visual analogue scale has been used to measure patient's confidence to successfully complete their action plans (0 = not at all confident; 10 = very confident). A lack of confidence (score less than 7) would suggest the plan should be modified or discussed further to optimize the chances of successful completion (Lorig, Holman, et al., 2006).

Outcome of this stage: The health professional and patient will agree the action plan that will create the next *stepping stone* to achieving a specific goal and, if necessary, a coping plan to deal with anticipated barriers. For example: Action plan: *Jane will complete her mouth and breathing exercises twice daily over the next week* (to work on the goal of being confident talking on the telephone to friends). Barrier: Jane is worried that she will not complete her exercises properly and will just give in. Coping plan: the speech and language therapist suggests that the rehabilitation assistant can visit the next day to supervise Jane practise her exercises and provide guidance if necessary. Jane agrees this is a good idea and rates her confidence to carry out the action plan as 7 on the self-report self-efficacy measure.

11.12.4 Stage 4: Appraisal and Feedback

At this stage, the health professional and patient appraise the outcome of the action plan and progress in relation to the goal. Health professionals have an opportunity to give feedback; verbal praising of success will act to enhance patient self-efficacy and motivation. Where the goal has not yet been achieved, but reasonable progress is being made through action plan attainment, new action plan(s) can be set. If action plans have not been successful and little or no progress is being made in relation to the goal, it might be necessary to rethink the action plans and/or coping plans or even to return to the goal negotiation phase and reconsider if the goal is worth pursuing.

Outcome of this stage: Progress will be collaboratively reviewed. Patient self-efficacy will be enhanced through positive feedback or support given where progress is lacking. Joint decisions are made about what should happen next.

11.13 Implementation and Evaluation of G-AP in Routine Clinical Practice

Having developed the G-AP framework using theory and practice-based methods, our next objective was to evaluate its implementation in everyday clinical practice from the perspective of patients and health professionals. We conducted a process evaluation of the

G-AP framework within the ReACH team in Scotland (Scobbie, McLean, Dixon, Duncan, & Wyke, 2013). Following team training, the framework was applied to people recovering from stroke over a 6-month period. The study focused only on people with stroke as goal setting is considered *best practice* with this patient group (Royal College of Physicians, 2008; Scottish Intercollegiate Guidelines Network, 2010). Additionally, we wanted to evaluate the multidisciplinary use of G-AP and the majority of stroke referrals to the ReACH team required multidisciplinary input.

The aim of the study was to investigate G-AP implementation and the practical experience of using G-AP, from the perspective of patients and health professionals, in routine clinical practice. Specifically, we were interested in whether G-AP was implemented as intended, the utility of the G-AP stages and patient and health professional views about its perceived benefits (if any).

Implementation of G-AP within the ReACH team was facilitated in three ways: (1) a G-AP protocol was illustrated on a visual flow chart to show how implementation of G-AP would fit within existing ReACH team goal-setting processes; (2) a G-AP patient-held record was developed to ensure that patients had information about their goals and action plans available to them in their own homes and (3) all team members participated in two training sessions, each lasting for 1 h, summarizing the G-AP framework and implementation protocol and use of the G-AP personal record (this training was in addition to the monthly updates team members had received on the stage-by-stage development of the framework).

The study involved two main methods of data collection: (1) *individual semi-structured interviews* with health professionals working within the ReACH team and with stroke patients receiving input from the service and (2) a detailed *audit examination* of the ReACH team service records of the stroke patients who participated in G-AP.

11.13.1 Was G-AP Implemented as Intended?

The case note analysis and discussion of implementation collected in patient and staff interviews revealed that goal negotiation, goal setting and action planning were largely implemented according to the protocol. However, there were inconsistencies noted in the implementation of the novel aspects of the framework, specifically coping planning, use of the visual analogue scale to measure self-efficacy and implementing appraisal and feedback on an *action plan-by-action plan* basis. Coping planning was viewed as a new and unfamiliar addition to practice which health professionals had not got into the habit of using. Health professionals tended to measure patients' confidence implicitly, for example, asking patients, 'do you think you'll be okay with that (action plan)?' rather than using the 0–10 self-efficacy scale. Reasons reported for non-use of the scale included forgetting to use it, not understanding its purpose and a belief it was laborious or could result in a negative emotional response if a patient rated their confidence as high then failed to complete an action plan. Health professionals also reported that the feasibility of implementing the appraisal and feedback stage could be compromised by time constraints.

11.13.2 Tools and Strategies to Facilitate G-AP Implementation

A variety of tools and strategies were used by health professionals to facilitate the goal negotiation and goal-setting stage of the process. Of particular importance was the use of Talking Mats® (Bornman & Murphy, 2006), a low-tech communication framework which uses symbols to facilitate communication. Health professionals referred to questions or

stock phrases they would use to facilitate goal negotiation and goal setting, for example, *'think about what you would like to be able to do by (date)'* or *'what sort of things did you enjoy doing prior to having the stroke'* or *'think of something very specific to do with that particular activity you would like to work on*.' Giving patients a few examples of potential goals was sometimes used as a starting point and basis for discussion. Finally, the ICF was viewed as a useful framework to help health professionals and patients consider the full spectrum of potential goals at the level of impairment, activity and participation.

11.13.3 Clinical Usefulness/Acceptability of the G-AP Stages

Each of the G-AP stages made a useful contribution to the overall process; however, important insights were gained about implementation of G-AP in routine clinical practice. Firstly, goal negotiation and goal setting tended to be an iterative process merging into one rather than two separate stages. Secondly, the appraisal/feedback stage included a *support* and *decision-making* component. These findings have been used to inform development of the visual illustration of the G-AP framework (Scobbie et al., 2013). If self-appraisal led patients to believe they were successfully attaining action plans and on target for meeting their goals, it was encouraging. In these instances, health professionals' feedback acted to increase patient confidence (self-efficacy); the most commonly used self-efficacy enhancing technique was verbal praising of successes. However, if patients felt they were not attaining action plans or were not on target for meeting their goals, it could result in a negative emotional response. Health professionals tended to respond to this by providing support and reassurance.

Following appraisal and feedback, decisions were made about what to do next. Often, this resulted in either action plans being progressed to the next stage or deciding on a new goal on the basis that the previous goal had been achieved. In some cases, non-attainment of action plans led to a shared view that the goal was unachievable; this resulted in goal disengagement and renegotiation of an alternative goal. An important acceptability issue raised by health professionals was their concern that the appraisal and feedback stage made it explicit to patients if they were not making progress and that this could have a negative impact on their well-being. Different strategies used to manage this were reported including avoiding or not explicitly addressing goals that had not been achieved, reframing failure in a positive way or providing support and reassurance. Conversely, none of the patients voiced concerns about goal non-attainment or how it might impact on their well-being. Although failure to achieve action plans and goals was said to be disappointing, some patients said they used what they had learned from their experience to reassess their situation and to consider more realistic goals.

11.13.4 Health Professional and Patient Views about the Perceived Benefits of the Framework

Patients and health professionals reported that G-AP facilitated flexible patient/professional partnerships, attainment of unique patient goals and family member involvement in the process. Patients and health professionals described working together throughout the G-AP process; however, the nature of the partnership differed from patient to patient. Firstly, each had a different role to play. Patient accounts suggested their role was to tell health professionals about their priorities and preferences, give them feedback about what they felt they could and could not achieve and suggest goals that they would like to work on. Health professionals described their role in terms of guiding and encouraging patients through the G-AP

process with a view to tailoring unrealistic or general goals into specific, achievable goals and providing education and information that would help patients make informed goal choices.

Secondly, the range of patient and staff views suggested that a G-AP continuum existed with *patient-led* at one end and *therapist-led* at the other. Patients who preferred health professionals to take the lead believed that they were the *experts*, someone who had experience dealing with other people in the same situation and so were better placed to suggest goals that would help them through their recovery process. Patients who were able to take the lead tended to have experience of setting goals in other life contexts (e.g. in their working lives) or had highly valued activities that they were very motivated to return to (e.g. returning to work). Regardless of who led the process, both groups described each stage of the process as collaborative with agreed goals and action plans reflecting patients' priorities and unique personal circumstances.

Patients judged the effectiveness of the G-AP framework on the basis of whether they were able to meet their goals and carry them out as planned. In describing how the G-AP process had helped them, patients talked about how identifying personal goals and action plans acted as an incentive, providing something to aim for. They also created a focus, with *steps* that made the process manageable for them. A repeated view was that achieving goals and action plans produced a sense of achievement and an important boost in confidence.

Health professionals tended not to focus on goal attainment when discussing the effectiveness of the G-AP framework; instead, they talked about the positive influence it had on their practice. In particular, they viewed their goal-setting practice to be more patient centred (with goals reflecting patients' priorities and personal circumstances rather than only their professional perspective), goal focused and efficient. Because goals and action plans acted as a benchmark against which progress could be gauged, it was easier for them to know if progress was being made or not and to identify when a change of plan was required. Health professionals felt that the G-AP process helped patients to have a greater sense of control and participation in the rehabilitation process. There was a commonly held view that using G-AP led patients to be more focused on their goals, which in turn had a positive impact on their motivation and adherence to a goal-directed behaviour.

Both patients and health professionals talked about *family member* involvement in the G-AP process. Patients gave examples of how family members had suggested goals and action plans and provided ongoing encouragement and support to optimize action plan attainment. In all examples given, the G-AP patient-held record had created the opportunity for family members to be involved as they had access to the record and could read for themselves the goals that were set and the kinds of action plans in place to facilitate meeting them. Health professionals acknowledged that family members could have an important role in facilitating the G-AP process, for example, suggesting goals, providing reassurance and encouragement, providing prompts to complete action plans (particularly if the patient had memory difficulties) and supervising patients carrying out their action plans.

11.14 Conclusion

The development of a framework to guide goal-setting practice in community-based stroke rehabilitation has been described. This process involved four main stages: a review of the literature to identify theories of behaviour change relevant to the

goal-setting process, a causal modelling exercise to link theory to practice, convening of a clinical task group to develop the causal model into a G-AP practice framework and preliminary evaluation of the G-AP framework in one community rehabilitation team. The findings of the evaluation have informed development of the G-AP visual illustration and implementation protocol.

We are now in the process of conducting a process evaluation of the developed G-AP on a larger scale across diverse team settings. We aim to find out what patient, carer and therapist experiences can tell us about: (1) the acceptability of G-AP, (2) the important landmarks in stroke recovery and the contribution of G-AP (if any) to their achievement and (3) the feasibility of implementing G-AP according to protocol. This will inform the design of an effectiveness study in which the impact of G-AP on patient outcomes and professional practice will be compared to standard practice. An economic evaluation will be built into this study so a cost–benefit analysis can be completed.

The development of the G-AP framework was carried out whilst one of the authors (LS) was undertaking a part-time research fellowship and working clinically in the ReACH team. This meant that the project benefited from the time resources of LS, the academic resources of a university and the dynamic clinical–academic link between the ReACH team and the university. This level of resource is unlikely to be available to the majority of rehabilitation professionals. There is a question, therefore, of how the power of theory can be used to examine and perhaps improve usual clinical practice. However, it is possible to apply theory to everyday clinical practice. Rather than start with theory and build a practice framework or an intervention from theory, it is possible to start with current practice and apply theory to it.

Practitioners should begin a theory-based practice review by describing each component of their current practice and organizing this description so that it best represents the process of their rehabilitation practice from start to finish. Each component of current practice can then be compared to theory, for example, using any or some of the theories or models described in this book. This comparison could be carried out using a process of consensus within a rehabilitation team, whereby the team meets to discuss the relationship between theory and each component of their practice until a consensus agreement is achieved. In this way, each component of current practice can be labelled by one or more theoretical constructs. This information will provide the basis for understanding current practice and how it might be optimized.

Knowing which theoretical constructs current practice targets might enable the identification of opportunities to optimize that practice. For example, a theory-based review of practice might reveal simple techniques that are not currently being used, for example, assessing patient confidence in their ability to carry out an action plan prior to its implementation. Inclusion of such techniques may be simple and practicable within current resources. In contrast, the review might also reveal aspects of practice that appear inconsistent with current theoretical thinking. These practice components could be considered for review or removal from current practice, which might free up professional time to attend to those components that are theory-based. It may also be possible to review the order or sequence with which practice components are delivered, for example, are all action and coping plans thoroughly reviewed prior to progression to new action plans or goals? Again reordering practice components need not necessarily require additional resources to implement. Thus, a theory-based practice review offers rehabilitation teams the opportunity to use theory to understand and evaluate their current practice within the resource constraints experienced by practitioners.

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Chief Scientist Office Form 4(RTF)

Final report of a Research Training Fellowship	**CSO reference number:** DTF/11/02

Please complete this form in 12 point font size

1. Fellowship title:

Goal setting in community based stroke rehabilitation: A feasibility and acceptability study of implementing a goal setting and action planning practice framework.	
Start date: 1st August 2011	Finish date: 31st August 2014

2. Fellow:

Lesley Scobbie

3. Supervisors:

Professor Sally Wyke; Professor Marian C Brady; Dr Edward E A Duncan

4. Fellow signature:

	Date: 30.9.14

Structure of final report:

1. Summary
2. Brief report on research carried out under the Fellowship including original aims, methodology, results, discussion, conclusions, importance to NHS and possible implementation
3. Report on training and development undertaken during the Fellowship
4. Financial statement (to be submitted 31.12.14)
5. Focus on Research summary of research undertaken

1. Summary

This CSO doctoral training fellowship has been pivotal to my development as a clinical academic researcher who is capable of becoming a research leader of the future. I have completed a fellowship research project with findings that have the potential to influence NHS practice and improve patient care. In doing this, I have experienced a step change in my research knowledge, analytical thinking, project management and academic writing skills. The training I have undertaken has met my specific learning needs and allowed me to conduct the fellowship project to the highest standard. I have successfully submitted a paper reporting findings of the UK Survey completed in Phase 1 one of this fellowship [1]. This is the final paper I need to complete my PhD by publication which will be submitted in December 2014. Four further papers reporting the Phase 2 Implementation study are in preparation. Finally, findings of this study have been presented at two national conferences. I am now confidently turning my sights to a future clinical-academic career and aim to be producing research, of an international standard, that will inform evidence based practice and excellent in patient care.

2. Brief report on research carried out under the Fellowship

2.1. Background

Goal setting is considered 'best practice' in stroke rehabilitation [2, 3]; however, to date, no randomised controlled trials have been completed to demonstrate that goal setting makes a unique contribution to stroke survivors rehabilitation outcomes [4]. Addressing this evidence-practice gap has been the impetus behind a programme of research to develop and evaluate a goal setting and action planning (G-AP) practice framework to guide goal setting practice in community based stroke rehabilitation settings [5-7] (see Appendix 1,2 and 3 for related abstracts). The overarching aim of this fellowship project was to progress this work and to inform the next stage of G-AP evaluation.

2.2. Original aims and research questions (RQ)

Within this fellowship, and in line with the Medical Research Council (MRC) guidelines for the development and evaluation of complex interventions [8], I sought to address the aims and research questions (RQs) outlined in Box 1.

Box 1. Aims and Research Questions

Phase 1 - Aim 1. To investigate current goal setting practice in Community Rehabilitation Services providing stroke rehabilitation across the UK (*MRC recommendation – understand the context in which the intervention could be delivered and what 'usual' practice entails).*

- **RQ1.** What are the structures and organisation of Community Rehabilitation Services providing services to people recovering from stroke across the UK?
- **RQ2**. What are the main components of 'usual goal setting practice' in these settings?

Phase 2 - Aim 2. To investigate implementation of the G-AP framework with stroke survivors in three different Community Rehabilitation Services *(MRC recommendation – Can the intervention be delivered as intended? How might contextual factors influence outcomes? What are the important outcomes that should be considered in evaluation?).*

- **RQ3.** (i) Can different Community Rehabilitation Services implement the G-AP framework according to protocol? (ii) What factors facilitate or inhibit use of the G-AP framework in clinical practice?
- **RQ4**. What can patient, carer and therapist experiences tell us about: (i) the acceptability of G-AP (ii) important landmarks in stroke recovery, and the contribution of G-AP (if any) to their achievement.

After commencing the fellowship, an expansion was made to RQ3 to include:

- *(*iii) Does G-AP training prepare staff to deliver the G-AP framework as intended?

2.3. Methodology

Phase 1: Survey

An electronic survey was designed and piloted over a four month period. *Service inclusion criteria:* Community Rehabilitation Services across the UK providing rehabilitation to stroke survivors (either exclusively or with other diagnostic groups). *Service recruitment:* A multi-faceted strategy used to optimise recruitment. *Data collection and analysis:* The survey was electronically distributed in June 2012 and data collected over a four week period. Data were analysed using descriptive statistics. Responses to open ended questions were categorised, counted and ranked.

Phase 2: Implementation study

Study Design: Staff training for, then implementation of, the G-AP framework in 3 different Community Rehabilitation Services with an accompanying process evaluation.

- ***G-AP training and implementation***

Procedure: All staff in each recruited Community Rehabilitation Service completed on-line G-AP training (http://www.g-apframework.scot.nhs.uk/Default.aspx) and participated in a face to face G-AP training day. Training materials were developed and delivered as detailed in Box 2. Following training, each service implemented G-AP, with all new stroke survivors referred to the service, for a six month period.

Box 2 Development of G-AP training

Development of online G-AP training

- The professional advisory group for this study advised that the planned 3 days of training would not be feasible for many services to participate in.
- In response to this, I decided to develop and on-line G-AP training resource that could be completed by individual staff in their own time (approx. 1/2/ day); followed up by a face to face training day.
- A successful funding application was made to the AHP Fellowship awards, from NHS Education for Scotland, to secure IT support for the development of the on-line training.
- The online G-AP training is hosted on the SHOW website. It was/is openly available to staff for the purposes on this study, as well as other health and social care professional with an interest in goal setting.

Face to Face G-AP training

- Face to face training was developed to be delivered to the whole staff group in one day.
- Training development was informed by relevant literature*. Techniques were used (e.g. role play; provision of information and instruction) to target specific behaviour change domains at the staff level (e.g. enhance knowledge; skills and confidence related to use of G-AP).
- Training included presentations and small group work based on case study material (See Appendix 6 for training outline).
- The training was delivered by the fellow and a clinical colleague with knowledge of the theoretical underpinning of the G-AP framework and its use in practice

*Making psychological theory useful for implementing evidence based practice: a consensus approach. Michie, S. et al. Qual Saf Health Care 2005; 14:26–33.

- ***Process Evaluation***

Procedure: Following the 6 month implementation period, a process evaluation of G-AP was undertaken. *Inclusion criteria*: Staff, stroke survivors and carers with experience of using the G-AP framework. *Data Collection*: Five data collection methods were used: (i) Staff G-AP training evaluation (online questionnaire), (ii) In-depth interviews with stroke survivors, (iii) In-depth interviews with carers of interviewed stroke survivors (if available), (iv) Case note analysis of interviewed stroke survivors, and (v) Staff focus groups within each service. *Analysis*: A cross sectional analysis of interview and focus group data was completed using a "Framework" approach [9]. Analysis focused on answering main research questions listed above. Case-note data were analysed descriptively. Questionnaire data were analysed using descriptive statistics. All available data was compared within, and between, services.

2.4. Results

Phase 1: Survey results (RQ1&2)

Response rate: Four hundred and thirty seven individual service responses were identified and included in the analysis. Sixty four percent (n=279) of services represented in the survey were from England; 27% (n=118) from Scotland; 7% (n=31) from Wales and 2% (n=9) from Northern Ireland.

RQ1. What are the structures and organisation of Community Rehabilitation Services providing rehabilitation services to stroke survivors across the UK?

Different types of Community Rehabilitation Services were reported including Community Rehabilitation teams (36%), Early Supported Discharge Teams (12%) and a combination of the two (17%). Services were highly variable in terms of their size, composition and the input they provide. The majority were multidisciplinary (82%), and included physiotherapists (85%), occupational therapists (84%) and rehabilitation assistants (70%). Typically, stroke survivors were seen their own home (83%). The majority of services reported that input was provided for five to 12 weeks (53%) and for between two and five sessions a week (71%). Most services saw a mixed diagnostic group of patients (71%), both under and over 65 years of age (60%).

RQ2. What are the main components of 'usual goal setting practice' in these settings?
Ninety one percent (n=358/395) of services reported that goal setting was used with all or most stroke patients. Four services (1%) reported they did not use goal setting with any stroke patients. Reasons reported for non-use included: goal setting is not a valued activity within the service and patients are not able to participate in the goal setting process. Reports of goal setting activities routinely used within services indicated that; whilst some activities included within the G-AP framework were implemented routinely, others were not. For example: 98% of services reported asking patients about goal priorities; 60% reported breaking down goals into action plans, and 39% reported providing patients with a copy of their personal goals.

Phase 2: Implementation study results (RQ3&4)

- ***G-AP training and implementation***

Recruited services: Ten Community Rehabilitation Services were invited to participate in the study - two agreed to participate. Staff shortages and commitment to other projects were the main reasons given for declining (See Box 3 for details of services recruited). For the purposes of this evaluation, Service **1a** (staff n=18) and Service **1b** (staff n=16) were treated as two separate services as they operated in different geographical locations, were managed independently and comprised different staff groups. All staff members from each service (n=55) participated in the G-AP training (with the exclusion of the consultant in Service 2 who had competing clinical responsibilities).

Box 3. Services recruited to study.

Service 1: A multidisciplinary health and social care team in Lothian with 34* staff members that provided rehabilitation to stroke survivors, both over and under 65 years of age, living in the community. The service operated over two different day centres (**Service 1a and Service 1b**). NHS professionals within this service could work across both day centres; however, social care workers typically worked in one of the two day centres. Day centres were managed by different council managers. Stroke survivors were typically seen in one of the day centres, but could be seen at home or in another community setting if required.

Service 2: A multidisciplinary NHS service in Fife with 21* staff members that that provided rehabilitation to stroke survivors, and people with other neurological conditions, living in the community. People seen by the service were typically under the age of 65. The service operated in a hospital based out-patient department and was led by an NHS consultant in rehabilitation medicine. Stroke survivors were typically seen in the out-patient department, but could be seen at home or in another community setting if required.

*Approximate numbers due to on-going staff changes

Stroke Referrals to each service: The number of stroke survivors referred to each service within the implementation period, and subsequently using G-AP is summarised in Table 1. Reasons given for G–AP not being used all with stroke survivors included: patient moved away from area; short input provided (less than 3 visits); patient only required equipment and patient refused rehabilitation input.

Table 1. Stroke survivors referred to/ using G-AP in each service

Service	New stroke referrals	Stroke survivors using G-AP
1a	24	18
1b	27	18
2	38	29
Total	**89**	**65**

- ***Process Evaluation***

Table 2 provides an overview of staff, stroke survivors and carers recruited from each service to take part in the process evaluation. Because only 4 carers were interviewed, the views and experiences of carers are not represented in the results.

Table 2. Participants recruited to process evaluation

Service	Staff recruited for focus groups	Stroke survivors recruited for interview & case note review	Carers recruited for interview
1a	9	9	2
1b	10	4	0
2	12	5	2
Total	**31**	**18**	**4**

Staff: Seventy five percent (n=41) of staff across all services completed the on-line G-AP training questionnaire immediately following training. Seven focus groups were conducted following G-AP implementation: 2 in Service **1a**; 2 in Service **1b;** 3 in Service **2**. All health and social care staff groups were represented in the focus groups.

Stroke survivors: All stroke survivors who had used G-AP in each service were invited to participate (n=65). Of these, a total of 18 stroke survivors agreed to take part in interviews and have their case notes reviewed. Both men and women were represented in the sample, ranging from 24 to 85 years of age, with mild to moderate levels of disability based on retrospectively applied modified Rankin scores.

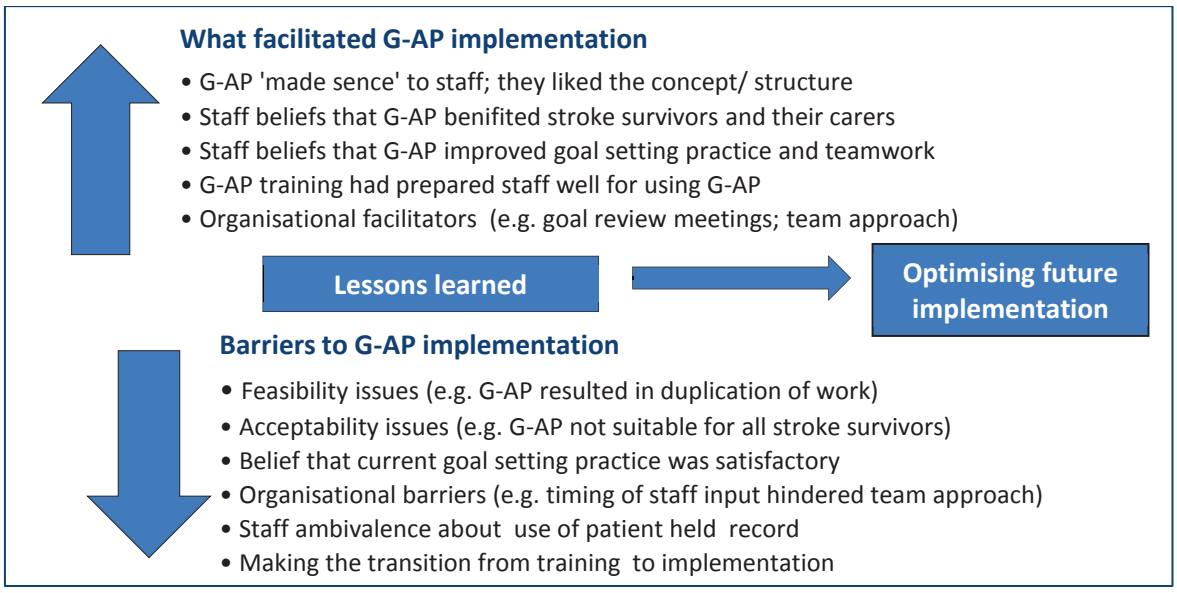
RQ3 (i). Can different CRTs implement the G-AP framework according to protocol?

The case note review suggested that *Service **1a*** implemented G-AP as intended with minor exceptions noted in measuring confidence to complete action plans. *Service **1b*** implemented G-AP as intended to some extent. Measuring confidence to complete action plans was inconsistent, and appraisal and feedback not always implemented on an action plan by action plan basis. Within *Service **2***, G-AP was implemented as intended by some staff. However, others did not appear to implement G-AP at all.

RQ3 (ii). What factors facilitate or inhibit use of the G-AP framework in clinical practice?

Staff focus group data were used to investigate the factors that influenced G-AP implementation. Concurring with findings of the case note review, focus group findings suggested that each service implemented the G-AP framework with varying degrees of success with Service **1a** being most successful, and Service **2** least successful. This directly related to the presence of facilitators, barriers and the 'lessons learned' as the implementation process unfolded (See Figure 1).

Figure 1. Facilitators / barriers to G-AP implementation



Service 1a and (to a slightly lesser extent) **Service 1b** reported all facilitators. In particular, these services reported that: they liked the concept of G-AP and the structured approach it offered to goal setting practice; that G-AP benefited stroke survivors their carers (*e.g. by increasing their active involvement in the process*); that it improved goal setting practice (*e.g. practice was more patient centred*) and team work (*e.g*. *improved interdisciplinary working between health and social care staff*). Service 1a reported more organisational facilitators than Service 1b (*e.g. regular discussion of G-AP goals at a service level and mentorship opportunities between health and social care workers*). The main barriers reported by Service 1a and 1b were organisational *(e.g. social care workers lost momentum using G-AP as they were not scheduled to see the same stroke survivor on a week to week basis).*

Service 2 reported considerably fewer facilitators. Like Service 1a and 1b, they liked the structure and concept of G-AP and reported some benefits at the patient and practice level. However, there were no reported benefits to teamwork or carers. A dominant theme was that, although some individual staff within the service had implemented G-AP successfully, it had not been embraced, or implemented, at a team level. Many barriers to G-AP implementation were identified. Some were organisational (*e.g. the timing of staff input was typically staggered which hindered a team approach to G-AP implementation*). Others were about making the transition from training to implementation (*e.g. momentum was lost after training as there was a delay waiting for new stroke referrals to get through the system*). Use of G-AP also presented the service with feasibility issues (*e.g. using G-AP alongside mandatory tools e.g. Malcomess Care Aims resulted in duplication)*. It was acknowledged that reconciling these issues would require reorganisation to the structure and process of rehabilitation input within the service, and commitment from all staff members use G-AP in practice.

All services reported 'lessons learned' as the implementation process unfolded which had the potential to optimise future G-AP implementation (See Box 4).

Box 4. Lessons Learned

1. G-AP implementation should to be **mapped onto current rehabilitation processes** so that it is clear who, does what, when (*e.g. who should initiate the goal negotiation stage and at what point in the rehabilitation process*).
2. **Mentorship opportunities** should exist within services where staff members' who are confident using G-AP can support those who are less confident.
3. **A system to monitor G-AP implementation** should be in place within the service so that issues can be identified and addressed on on-going basis.

RQ3 (iii). Did G-AP training prepare staff to deliver the G-AP framework as intended?
Data from the G-AP training questionnaire (collected immediately after training) and the staff focus groups (collected following G-AP implementation) were used to answer this

question. Both questionnaire and focus group data indicated that the online and face to face G-AP training were well received by the vast majority of staff. Overall, staff responses suggested that they felt adequately prepared to implement G-AP following training see Box 5.1). However, staff recommended that more time be spent on use of the G-AP patient held record in practice, and some guidance be given to help services make the transition from training to implementation (see Box 5.2). Staff reports suggested that, whilst G-AP training was a useful starting point, much of what you need to know to implement G-AP effectively can only be learnt by actually doing it.

Box 5. G-AP training summary data

1. **G-AP Training Questionnaire**
   - 81% of staff rated the web based G-AP training as 'Good' or 'Very Good'
   - 93% of staff rated the face to face G-AP training as 'Good' or 'Very Good'
   - 63% of staff reported they were 'Somewhat Confident' and 38% 'Very Confident' to apply what they had learned practice
   - 68% of staff reported they were 'Very Committed' to apply what they had learned in practice.

2. **Focus Group data**

Staff member, Service 1b: *"Training could have prompted us, guided us, to consider how we were going to implement G-AP… to say; 'now sit down as a team and think about it.'"*

Staff member, Service 1a: *"More practical sessions using the paper work* [G-AP patient held record] *in relation to a case study would have been useful."*

RQ4 (i). What can patient and staff experiences tell us about the acceptability of G-AP?

Overall, stroke survivors viewed the G-AP process as acceptable (see Box 6.1). A marginal view raised by one stroke survivor was that the G-AP patient held record was 'childish' and not well structured (E17). Others felt (E17&F7) that the G-AP patient held record was not used effectively by staff (in Service **1b** & Service **2**) who frequently did not ask to see the record, or discuss (and subsequently update) the goals and action plans written in it (see Box 6.2).

Box 6. G-AP acceptability

1. ***Stroke survivor E2:*** "[The process of setting goals] *… helps me focus on what I'm aiming for, it just kind of reminds me a wee bit of what I'm aiming for; so it's helpful in that way. I don't feel any huge anxiety about that, about setting goals"*
   Interviewer*: "Right, so there is no negative effect?"*
   Stroke survivor E2*: "No, I think it's positive."*

2. **Stroke Survivor E17**: "*I felt this whole G-AP folder was badly thought out, there was no rhyme or reason to it…seventy five percent of the time the folder was never brought out* [by the staff]*. I took it religiously with me every Friday and nobody* [staff] *asked me for it."*

Potential (rather than actual) acceptability issues were raised by staff in Service **1a** and **1b**. Both services talked about the tension between what stroke survivors need, and what the service can deliver. For example, whilst both services were committed to setting patient centred goals, in order to manage referral rates and maintain throughput, priority was given to activity and participation goals that could be addressed in the shorter rather than longer term (*e.g. one stroke survivor whose main issue was social isolation was referred to another service that provided slow stream rehabilitation*).

Staff in Service 2 raised actual acceptability issues that hindered G-AP implementation. A prevalent view was that, whilst 'usual' goal setting practice was not perfect, it was familiar and fitted with current team processes and documentation procedures. Introduction of G-AP had resulted in duplication (*e.g. writing goals in the G-AP record that were also recorded elsewhere)* and for some staff, offered no added value over and above usual practice (*e.g. to occupational therapists who preferred using the Canadian Occupational Performance Measure*). Psychologists within the service had concerns that G-AP was more suited to setting and working towards goals of a behavioural nature, and that using G-AP with stroke survivors who had complex emotional needs could be counterproductive (*e.g. it could trivialise their emotional issues by focusing on behavioural goals*). Finally, concerns about the acceptability of the G-AP record questioning if it offered any added value to stroke survivors or the goal setting process. This was in contrast views of some stroke survivors seen by the Service 2 who reported the G-AP record was a positive addition to their rehabilitation.

RQ4 (ii). What can patient and staff experiences tell us about important landmarks in stroke recovery, and the contribution of G-AP (if any) to their achievement.

When asked about important landmarks in their recovery, stroke survivors talked about *improvements in goal related sub-skills* and *achieving important goals*. For example, one stroke survivor (E2) described how improvements in his arm function and balance had led to him achieving his goal of cooking his own meals. Another (F1) reflected on how being able to walk to the end of the street was an important landmark in reaching her goal of being able to do her shopping, pay the rent and get to the bank (F1). Stroke survivor reports suggested that achieving personal goals enabled them to resume important life roles and leisure activities. This resulted in a positive emotional response and sense of well-being (see Box 7 where a stroke survivor reflects on achieving a personal goal).

Box 7. Impact of goal attainment

Interviewer: "*How did it make you feel when you were able to walk with the pram and hold your grandchild?"*

Stroke Survivor F2: "*Well, I just felt absolutely over the moon really… I just thought, 'This is normal, me walking down the road with my wee grandson.'"*

With the exception of one person, all stroke survivors gave examples of how they had to go through a process of understanding, accepting and adjusting to limitations imposed by the stroke. This often resulted in them down grading or disengaging from goals they had been previously striving to achieve. For some stroke survivors, this was relatively straight forward. For example, one woman (E16) described how her arm had not improved, even although she had carried out her daily exercise programme over many months. She came to the conclusion that her goal of making homemade soup was not achievable, and opted to buy pre-cut vegetables and use a soup maker instead. She asserted that, "*It's not how I used to make soup, but it's better than nothing*!" For other stroke survivors, this was a difficult process that posed a threat to their sense of identity and emotional well-being. One gentleman who had suffered a brain stem stroke (E14) realised the stroke had rendered many goals unachievable, for example being able to walk with a stick and get back to playing bowls. He cried as he admitted it was hard to accept these limitations saying, "*You think about the person you were and the person you are now… that's been very difficult*".

Both staff and stroke survivors described how G-AP had contributed to achieving landmarks in recovery, both in terms of achieving goals or accepting and adjusting to limitations. The most salient theme reported by staff was that G-AP helped stroke survivors' to take ownership of, and exert control over, their rehabilitation. This included identifying their own personal goals, gauging their own progress and making informed decisions about what was, or was not, achievable. Staff reports suggested that use of G-AP patient held record was an important way of helping some, but not all, stroke survivors take ownership of the process (see Box 8).

Box 8. Ownership of the process

Service 1b; Social care worker: "*I think with this other woman as well, there was ownership for her, 'this is my goal, here's what I want to set out and do, you guys help me achieve it.'*"

Most stroke survivors reported ways in which the G-AP process had helped them in their recovery (See Table 2). However, one stroke survivor (F10) reported that G-AP had not made any contribution to his recovery. He felt he did not need to negotiate goals (*he knew what his goals were*) and did not need to record them in the G-AP record (*he wouldn't forget hem*). He did not follow action plans (*he did not enjoy doing exercises*) and achieved all of his goals as his spontaneous recovery progressed stating, "*It was just the effects of the stroke wearing off.*"

Table 2. Ways in which G-AP stages contributed to recovery

G-AP Stage	How it contributed to achieving landmarks in recovery
Goal negotiation/ goal setting	• Goals set reflected patients' priorities • Rehabilitation was tailored to patients' goals • Goals provided focus, motivation and hope for the future
Planning/ measuring confidence	• Action plans created manageable stepping stones to goal attainment • Action plans increased focus, motivation and practise • Coping plans and measuring confidence to complete plans facilitated successful action plan completion
Action	• Experience of success; Improve goal sub-skills, confidence and emotional well-being • Experience of setbacks; Insight into deficits, coping response
Appraisal, feedback & decision making	• Helped patients' gauge progress and realistically decide what they could/ couldn't do • Patients able to make informed decision about whether to continue goal pursuit or adjust/ disengage from goal

For some stroke survivors, the G-AP patient held record was of great benefit (see Box 9). It reminded them of what they had to practise at home, helped them to gauge progress and created an opportunity for family members get involved in their rehabilitation; other stroke survivors did not report any benefits (or harm) from use of the record.

Box 9. Benefit of G-AP patient held record

Interviewer: *"Did you like the folder* [G-AP patient held record]*?"*

Stroke Survivor F1: *"It was brilliant".*

Interviewer: "*Tell me what was good about it or what wasn't so good about it?"*

Stroke Survivor F1: "*Well M* [nurse] *used to set the goals out for me, and the speech and language therapist used to set a goal out for me, and it was just the pleasure of being able to do it and them coming back the next time and reading that folder and* [they] *saw what I had done."*

2.5. Discussion

Both the survey completed in Phase 1 of the fellowship and implementation study completed in Phase 2 have provided important insights that will inform how to best approach further evaluation of the G-AP framework. The survey has highlighted the complex and changing nature of community rehabilitation services across the UK, and how 'usual' goal setting practice is likely to be similar to/ different from practice informed by the

G-AP framework. The implementation study has shown that G-AP has the potential to help stroke survivors to reach important landmarks in their recovery, and that the interaction between the intervention (G-AP) and the context (service in which it is delivered) is likely to be critical to its success or failure. We are clearer about the factors that will help and hinder G-AP implementation, in particular the organisational structure of services. G-AP is likely to be most successful in those services that do not need organisational processes to fundamentally change to deliver it; or in those services that are willing to change organisational processes if required. The importance of proactively considering how staff, through mentorship opportunities, can be supported in delivering G-AP and how G-AP implementation can be monitored and adjusted over time has been highlighted.

Whilst both Phases of this study include methodological strengths (e.g. the high service recruitment rates in the Survey; innovative G-AP training developed for the implementation study; rich data set collected for the process evaluation); there are limitations worthy of consideration. In Phase 1, respondents were asked to complete the survey on behalf of their service. This may have been problematic for respondents who reported adopting their own approach, rather than a service approach, to goal setting. Whilst we acknowledge this as a limitation, we were pleased with the high number of completed responses (82%) which suggests that respondents felt they could make a meaningful response on behalf of their service.

In Phase 2, we did not meet our recruitment targets for carers in any of the services. Consequently, carer views are not included within this report. This is a disappointing as our staff and stroke survivor data suggests that G-AP facilitates carer involvement in the rehabilitation process (probably through use of the G-AP patient held record); however, we have no carer data to describe the nature of their involvement in the process, and how they felt about it.

2.6. Conclusions

Goal setting is reported by community rehabilitatio staff as embedded within their services; however, practice is variable and may be sub-optimal. G-AP can be implemented in practice and help stroke survivors meet important landmarks in recovery. A suitably designed rigorous evaluation of the G-AP framework is warranted to develop the evidence base to optimise goal setting practice and patient outcomes in community based stroke rehabilitation settings. Findings gathered in this fellowship will be used to inform this future programme of work.

2.7. Importance to NHS and possible implementation

Evidence based practice: Goal setting is an essential component of stroke rehabilitation; however, the evidence base to underpin practice is not robust. This fellowship represents a crucial step in addressing this evidence-practice gap by gathering information that will inform the next stage of evaluation of the G-AP framework. Is G-AP more effective than

'usual' practice? Does G-AP optimise goal setting practice and result in improved patient outcomes? Health and social care professionals need to know the answer to these questions to inform best practice and optimise patient outcomes. Funding will now be sought to investigate the effectiveness of G-AP in a well-designed evaluation.

Person centred care: Patient involvement in the health care process is a top priority in the NHS. The findings reported in Phase 2 of this fellowship have provided further evidence that use of the G-AP framework can facilitate collaborative working between stroke survivors and health/ social care staff through the process of agreeing and work towards goals that reflect patients' needs, priorities and preferences.

Possible implementation: Health care policy continues to support the move away from hospital based, to community based rehabilitation services, with seamless delivery across health and social care. G-AP has been developed for use in community based rehabilitation services and can be used across the health and social care spectrum. Consequently, G-AP is well positioned for use in current and emerging community rehabilitation contexts.

3. Report on training and development undertaken during the Fellowship

I have completed all planned training set out in my CSO proposal (see Appendix 7 for list of training completed). I have also attended additional training events within the Nursing, Midwifery and Allied Health Professional (NMAHP) Research Unit (for example, use of NVivo to manage qualitative data) and self-funded events (for example, Chest, Heart and Stroke Scotland Goal Setting workshop). My general training and development has been greatly enhanced by attending on-going meetings within the NMAHP Research Unit (for example, Unit Meetings, Stroke Research Methods meetings and an academic writing group) all of which have provided me with a dynamic learning opportunities. During the fellowship, I have benefited from on-going review of my work and constructive feedback from my supervisors which has played an important part in my overall development as a researcher. Without exception, I have found the training and supervision to be of great value. My knowledge, understanding and use of research methods have significantly improved, especially in relation to the development and evaluation of complex interventions.

Dissemination Activities

Conference/ Poster Presentations: I was delighted to be asked to present at two prestigious events during the course of my fellowship: (i) The Royal College of Physicians Stroke Symposium in Glasgow 2013, and (ii) The Community Therapist Network annual conference in October 2013. I also presented a poster about the survey completed in Phase 1 of my fellowship at the UK Stroke Symposium in December 2013, and at the Society for Research in Rehabilitation meeting in June 2014. A lay version of the poster was requested for display at the UK Stroke Assembly in June 2014. I have been asked to present my work at an 'inspirational event' for community allied health professionals from the Oliver Zangwill

Centre for Neuropsychological Rehabilitation, Ely. As well as developing my presentation skills, these events have allowed me disseminate the findings of my research and develop important collaborative networks with other researchers in related fields (See Appendix 7 for other conference presentations delivered during the fellowship).

Publications arising from the fellowship: A paper entitled: "Goal setting practice in services delivering community based stroke rehabilitation: A United Kingdom (UK) wide survey" [1] has been published by Disability and Rehabilitation (see appendix 4 for abstract). In addition to this, I am first author on a paper published in BMC Health Services research describing an earlier process evaluation of G-AP implementation in one community rehabilitation service [7]. I have co-authored (by invitation) a book chapter entitled, "Theory-based Approach to Goal Setting" which has been published in "Rehabilitation and Goal Setting: Theory, Practice and Evidence" edited by two esteemed academics in the goal setting field (Richard Siegert and William Levack) [10]. A further four publications are in preparation which will report on different aspects of the Implementation Study conducted in Phase 2 of the fellowship (see Appendix 5 for details):

PhD submission: My PhD will be submitted in December 2014.

Other outputs: G-AP web based training available to all on SHOW website.

Summary

This CSO fellowship has been instrumental in helping me make the important transition from being a confident lead clinician within the NHS to becoming a confident clinical academic researcher. I am now in a much stronger position now to fulfil my aspiration of becoming a rehabilitation research leader of the future who can make important research contributions to support evidence based practice and excellence in patient centred care. I would like to take this opportunity to thank the CSO for awarding me this Doctoral Fellowship.

Lesley Scobbie, September 2014.

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10. **Scobbie L**, Dixon D. Theory-based approach to goal setting. In: R. R. Siegert, W. M. M. Levack, editors. Rehabilitation goal setting: Theory, practice and evidence. First ed. FL, USA. CRC Press; Taylor & Francis Group; 2014. .

CSO Appendix 1; Abstract 1.

Clinical Rehabilitation 2009; 23: 321–333

Identifying and applying psychological theory to setting and achieving rehabilitation goals

Lesley Scobbie, Sally Wyke Alliance for Self Care Research, Department of Nursing and Midwifery, University of Stirling and Diane Dixon Department of Psychology, University of Stirling, Stirling, Scotland
Received 22nd December 2008; returned for revisions 27th December 2008; revised manuscript accepted 7th January 2009.

Background: Goal setting is considered to be a fundamental part of rehabilitation; however, theories of behaviour change relevant to goal-setting practice have not been comprehensively reviewed.

Objectives: (i) To identify and discuss specific theories of behaviour change relevant to goal-setting practice in the rehabilitation setting. (ii) To identify 'candidate' theories that that offer most potential to inform clinical practice.

Methods: The rehabilitation and self-management literature was systematically searched to identify review papers or empirical studies that proposed a specific theory of behaviour change relevant to setting and/or achieving goals in a clinical context. Data from included papers were extracted under the headings of: key constructs, clinical application and empirical support.

Results: Twenty-four papers were included in the review which proposed a total of five theories: (i) social cognitive theory, (ii) goal setting theory, (iii) health action process approach, (iv) proactive coping theory, and (v) the self-regulatory model of illness behaviour. The first three of these theories demonstrated most potential to inform clinical practice, on the basis of their capacity to inform interventions that resulted in improved patient outcomes.

Conclusions: Social cognitive theory, goal setting theory and the health action process approach are theories of behaviour change that can inform clinicians in the process of setting and achieving goals in the rehabilitation setting. Overlapping constructs within these theories have been identified, and can be applied in clinical practice through the development and evaluation of a goal-setting practice framework.

CSO Appendix 2; Abstract 2.

Clin Rehabil published online 3 December 2010.

Goal setting and action planning in the rehabilitation setting: development of a theoretically informed practice framework

Lesley Scobbie Alliance for Self Care Research, University of Stirling and ReACH Team, NHS Forth Valley, Diane Dixon Department of Psychology, University of Strathclyde and Sally Wyke Alliance for Self Care Research, University of Stirling, UK .
Received 16th November 2009; returned for revisions 5th October 2010; revised manuscript accepted 11th October 2010.

Background: Setting and achieving goals is fundamental to rehabilitation practice but has been criticized for being a-theoretical and the key components of replicable goal-setting interventions are not well established.

Purpose: To describe the development of a theory-based goal setting practice framework for use in rehabilitation settings and to detail its component parts.

Methods: Causal modelling was used to map theories of behaviour change onto the process of setting and achieving rehabilitation goals, and to suggest the mechanisms through which patient outcomes are likely to be affected. A multidisciplinary task group developed the causal model into a practice framework for use in rehabilitation settings through iterative discussion and implementation with six patients.

Results: Four components of a goal-setting and action-planning practice framework were identified: (i) goal negotiation, (ii) goal identification, (iii) planning, and (iv) appraisal and feedback. The variables hypothesized to effect change in patient outcomes were self-efficacy and action plan attainment.

Conclusions: A theory-based goal setting practice framework for use in rehabilitation settings is described. The framework requires further development and systematic evaluation in a range of rehabilitation settings.

CSO Appendix 3; Abstract 3.

Scobbie et al. BMC Health Services Research 2013, 13:190
http://www.biomedcentral.com/1472-6963/13/190

Implementing a framework for goal setting in community based stroke rehabilitation: a process evaluation

Lesley Scobbie1*, Donald McLean2, Diane Dixon3, Edward Duncan1 and Sally Wyke4

Background: Goal setting is considered 'best practice' in stroke rehabilitation; however, there is no consensus regarding the key components of goal setting interventions or how they should be optimally delivered in practice. We developed a theory-based goal setting and action planning framework (G-AP) to guide goal setting practice. G-AP has 4 stages: goal negotiation, goal setting, action planning & coping planning and appraisal & feedback. All stages are recorded in a patient-held record. In this study we examined the implementation, acceptability and perceived benefits of G-AP in one community rehabilitation team with people recovering from stroke.

Methods: G-AP was implemented for 6 months with 23 stroke patients. In-depth interviews with 8 patients and 8 health professionals were analysed thematically to investigate views of its implementation, acceptability and perceived benefits. Case notes of interviewed patients were analysed descriptively to assess the fidelity of G-AP implementation.

Results: G-AP was mostly implemented according to protocol with deviations noted at the planning and appraisal and feedback stages. Each stage was felt to make a useful contribution to the overall process; however, in practice, goal negotiation and goal setting merged into one stage and the appraisal and feedback stage included an explicit decision making component. Only two issues were raised regarding G-APs acceptability: (i) health professionals were concerned about the impact of goal non-attainment on patient's well-being (patients did not share their concerns), and (ii) some patients and health professionals found the patient-held record unhelpful. G-AP was felt to have a positive impact on patient goal attainment and professional goal setting practice. Collaborative partnerships between health professionals and patients were apparent throughout the process.

Conclusions: G-AP has been perceived as both beneficial and broadly acceptable in one community rehabilitation team; however, implementation of novel aspects of the framework was inconsistent. The regulatory function of goal non-attainment and the importance of creating flexible partnerships with patients have been highlighted. Further development of the G-AP framework, training package and patient held record is required to address the specific issues highlighted by this process evaluation. Further evaluation of G-AP is required across diverse community rehabilitation settings.

CSO Appendix 4. Abstract 4.

http://informahealthcare.com/dre
ISSN 0963-8288 print/ISSN 1464-5165 online
Disabil Rehabil, Early Online: 1–8; 2014 Informa UK Ltd. DOI: 10.3109/09638288.2014.961652

RESEARCH PAPER

Goal setting practice in services delivering community-based stroke rehabilitation: a United Kingdom (UK) wide survey

Lesley Scobbie[1], Edward A. Duncan[1], Marian C. Brady[2], and Sally Wyke[3]

1Nursing, Midwifery and Allied Health Profession (NMAHP) Research Unit, University of Stirling, Stirling, Scotland, UK, 2Nursing, Midwifery and Allied Health Profession Research Unit, Glasgow Caledonian University, Scotland, UK, 3Institute of Health and Wellbeing, University of Glasgow, Glasgow, Scotland, UK

Purpose: We investigated the nature of services providing community-based stroke rehabilitation across the UK, and goal setting practice used within them, to inform evaluation of a goal setting and action planning (G-AP) framework.

Methods: We designed, piloted and electronically distributed a survey to health professionals working in community-based stroke rehabilitation settings across the UK. We optimised recruitment using a multi-faceted strategy.

Results: Responses were analysed from 437 services. Services size, composition and input was highly variable; however, most were multi-disciplinary (82%; n=335/407) and provided input to a mixed diagnostic group of patients (71%; n=312/437). Ninety one percent of services (n=358/395) reported setting goals with ‘‘all’’ or ‘‘most’’ stroke survivors. Seventeen percent (n=65/380) reported that no methods were used to guide goal setting practice; 47% (n=148/ 315) reported use of informal methods only. Goal setting practice varied, e.g. 98% of services (n=362/369) reported routinely asking patients about goal priorities; 39% (n=141/360) reported routinely providing patients with a copy of their goals.

Conclusions: Goal setting is embedded within community-based stroke rehabilitation; however, practice varies and is potentially sub-optimal. Further evaluation of the G-AP framework is warranted to inform optimal practice. Evaluation design will take account of the diverse service models that exist.

CSO Appendix 5. Papers in-preparation arising from Fellowship.

1. *Implementing a Goal Setting and Action Planning (G-AP) framework in community based stroke rehabilitation: Context is key.* **Lesley Scobbie**, Edward A. Duncan, Marian C. Brady, and Sally Wyke.

2. *Setting 'Realistic' goals in stroke rehabilitation – who should decide what is realistic?* **Lesley Scobbie**, Edward A. Duncan, Marian C. Brady, and Sally Wyke.

3. *Do patient held records augment the goal setting process in stroke rehabilitation settings?* **Lesley Scobbie**, Edward A. Duncan, Marian C. Brady, and Sally Wyke.

4. *Development and evaluation of training to support implementation of a Goal Setting and Action Planning (G-AP) framework in community based stroke rehabilitation settings.* **Lesley Scobbie**, Edward A. Duncan, Marian C. Brady, and Sally Wyke.

CSO Appendix 6. G-AP training day outline.

G-AP Training Day

8.45 – 9am: Registration and coffee

9am – 9.15: Welcome, introductions and aims of the day

9.15 – 10.15: G-AP: An overview

10.15 – 10.30: Break

10.30 – 11am: Coming up with the goals – understanding this stage

11 – 12.15: Coming up with the goals – implementing this stage in practice

12.15 – 1pm: Lunch

1pm – 1.30: Planning the steps – understanding this stage

1.30 – 2.45: Planning the steps – implementing this stage in practice

2.45 – 3pm: Break

3pm – 3.30: Monitoring progress and making decisions – understanding this stage

3.30 – 4.45: Monitoring progress and making decisions – implementing this stage in practice

4.45 – 5pm: Using G-AP in your team

Lunch and refreshment will be provided

Please remember to complete your online G-AP training

and bring your certificate along to the training with you.

Thanks,

Lesley

CSO Appendix 7. Training completed during CSO Fellowship

1. *Helping you submit a successful NHS research ethics application*. Wellcome Trust Clinical Research Facility Education programme, Edinburgh, 2011.
2. *The Art of Qualitative Interviewing* (1 day). Social Research Association, Edinburgh, 2012.
3. *Questionnaire Design, Application and Data interpretation* (3 days). University of Bristol, 2012.
4. *Running Effective Focus Groups* (1 day). Social Research Association, Edinburgh, May 2012.
5. *Good Clinical Practice* – Informed Consent Workshop (1/2 day). Professor Allan Gaw. Glasgow Clinical Research Facility (Western General) May 2012.
6. *Ethics In medical research* (1/2 day). Carolyn Ackland. East of Scotland Research Ethics Service, 2012.
7. *Improving Quality in Healthcare: Translating Evidence into Practice* (1 day). NHS Education for Scotland and TRiaDS, 2012.
8. *Evaluating Complex Public Health Interventions: DECIPHer short course*. University of Cardiff (3 days). 2013

CSO Appendix 8: Other presentations delivered during the course of the fellowship

1. **NHS Greater Glasgow and Clyde goal setting study day** (Invited speaker): "Unpacking the Goal-setting box." 2 presentations: (i) Theory/ philosophy behind goal setting and (ii) Goal setting; principals into practice; October 2011.
2. **NHS Forth Valley Goal Setting Study Afternoon** (Invited Speaker): "Goal Setting: Theory to Practice." January 2012.
3. **College of Occupational Therapists Annual Conference:** "Delivering goal setting in community based stroke rehabilitation: A process evaluation"; Glasgow, June 2012
4. **Stroke Methods Meeting Glasgow Caledonian University**: "A UK wide survey of goal setting practice with people recovering from stroke in community rehabilitation settings." January 2012.
5. **British Society of Rehabilitation Medicine study day** (Invited speaker). "Goal setting in neurological rehabilitation." May 2013.
6. **University of Strathclyde Stroke Research Group** (Invited speaker) – "A UK wide survey of goal setting practice in community stroke rehabilitation settings." February 2014.

CHIEF SCIENTIST OFFICE
Nursing, Midwifery and Allied Health Professions Research Unit

UNIVERSITY OF STIRLING

Invitation to participate in national survey

Dear Colleague,

Re: A national survey of goal setting practice in community based stroke rehabilitation.

Stroke rehabilitation in community based settings is not well understood. It is not clear what types of teams are delivering stroke rehabilitation, whether goal setting is used within them and what 'usual' goal setting practice looks like. This survey aims to answer these questions from a UK perspective.
If you are a health care professional providing rehabilitation services to stroke patients in a community setting, we would very much appreciate your help. Completing this survey will only take 5 to 10 minutes. Your participation will greatly enhance our understanding of community base stroke rehabilitation.

For every 20 completed surveys, a £20 donation will be shared equally between Chest Heart and Stroke Scotland and the Stroke Association to help stroke survivors and their family members. Additionally, we will send you the survey results and offer you an exciting opportunity to get involved in future research involving delivery of an evidence based goal setting and action planning framework.

To complete this survey, click on the following link:

https://www.surveymonkey.com/s/GOALSETTING1

Your participation is very important to us.
We would be grateful if you could return your survey by 17th July 2012

Further information about the survey is detailed below.

Who is conducting this research?

I am an occupational therapist and clinical research fellow funded by the Chief Scientists Office (part of the Scottish Government's Health Directorate) to conduct this research project. The research is hosted within the Nursing, Midwifery and Allied Health Professional Research Unit (NMAHP RU) at the University of Stirling, Scotland. The NMAHP RU has an established programme of internationally acclaimed stroke research.

Things you should know

This study has received ethical approval from the University of Stirling School of Nursing, Midwifery and Health ethics committee and has UK wide R&D approval. Only the research team will have access to the information that you provide. Any details that could identify you or your team will be kept confidential and will be stored securely. No individual or team will be identifiable in any of the publications or presentations resulting from this project.

Further Information

If you have any queries or concerns about this project, please feel free to contact me. If you would like to speak to someone not directly involved in the project, please contact Professor Brian Williams, Director of the Nursing, Midwifery and Allied Health Professional (NMAHP) Research Unit.

Contact details:

Lesley Scobbie *Clinical Research Fellow* *NMAHP Research Unit* *University of Stirling* *E-mail: Lesley.Scobbie@stir.ac.uk* *Tel: 01786 466115*	*Professor Brian Williams* *Director* *NMAHP Research Unit* *University of Stirling* *E-mail: Brian.Williams@stir.ac.uk* *Tel: 01786 466341*

Thank you for reading this information sheet.

A survey of goal setting practice in community based stroke rehabilitation

Introduction

Dear Colleague,

Just before you go on to complete the questionnaire, we want explain two key terms used in the questions.

1. When we refer to a 'team' we mean a group of two or more health professionals working together in a rehabilitation team, service or setting.

2. When we refer to 'goal setting' we mean setting targets which the patient, therapist or team will work towards over a period of time.

Please answer each question on behalf of your team - just choose the answer you think *best* describes your team.

Thank you!

Lesley Scobbie

About your team

1. What types of patients are seen by your team?

- ◯ Stroke patients only
- ◯ Mixed patient group including stroke patients

2. What age range best describes the patients seen by your team? (tick all that apply)

- ☐ Age 15 and under
- ☐ Age 16-64
- ☐ Age 65 and over

3. In which setting are patients usually seen by your team?

- ◯ Patients own home
- ◯ Residential care setting
- ◯ Nursing home
- ◯ Day Unit

Other (please specify)

About your team

A survey of goal setting practice in community based stroke rehabilitation

4. What title best describes your team?

- ◯ Early Supported Discharge Team
- ◯ Community Rehabilitation Team
- ◯ Combined Early Supported Discharge and Community Rehabilitation Team
- ◯ Hospital based Outreach Team
- ◯ Re-ablement Team
- ◯ I am not part of a team, but work with other health professionals based on individual patient need
- ◯ Other (please specify)

5. What country is your team located in?

- ◯ Scotland
- ◯ England
- ◯ Northern Ireland
- ◯ Wales

About your team

6. What town or city is your team located in? (please write in text box below)

7. Does your team have a name?

- ◯ Yes
- ◯ No

8. What is the name of your team? (please write in full below)

About your team

9. Indicate which professional groups are represented in your team (tick all that apply).

- ☐ Physiotherapy
- ☐ Occupational Therapy
- ☐ Speech and Language Therapy
- ☐ Dietician
- ☐ Doctor
- ☐ Psychologist
- ☐ Nurse
- ☐ Social Worker
- ☐ Rehabilitation Assistant (or Therapy Assistant Practitioner)
- ☐ Other(s) (please name)

10. How many health professionals in total work in your team (including assistants)?

◯ 2-4 ◯ 5-7 ◯ 8-10 ◯ 11-13 ◯ 14-17 ◯ 18 or more

Stroke patients seen by your team

11. Approximately how many stroke referrals are accepted by your team each month?

- ◯ 0-5
- ◯ 6-10
- ◯ 11-15
- ◯ 16 or more

12. Approximately how long does your team work with stroke patients?

- ◯ 0-4 weeks
- ◯ 5-12 weeks
- ◯ 13-21 weeks
- ◯ 22 weeks or more

13. What is the maximum number of sessions a stroke patient will receive from your team in one week?

◯ <1 ◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ >5

Goal setting practice in your team with people recovering from stroke

14. Is goal setting used by your team with people recovering from stroke?

- ◯ Yes - with all patients
- ◯ Yes - with most patients
- ◯ Yes - with some patients
- ◯ No

Goal setting practice in your team with people recovering from stroke

15. Have any members of your team participated in goal setting training in the last year?

- ◯ Most members
- ◯ Some members
- ◯ No members
- ◯ Don't know

16. How often does your team meet to discuss patients' goals?

- ◯ Never
- ◯ Less than once a week
- ◯ Once a week
- ◯ More than once a week

Goal setting practice in your team with people recovering from stroke

17. Which of the following statements best describes how goals are set in your team? (tick all that apply)

- ☐ We set goals as a team with the patient
- ☐ We set goals as a team without the patient
- ☐ Individual team members set goals with their patients
- ☐ One team member sets goals with the patient on behalf of the team

Other (please describe)

18. Which method does your team use to guide goal setting practice? (tick all that apply)

- [ ] No particular method is used
- [ ] Goal Attainment Scaling (GAS)
- [ ] The Canadian Occupational Performance Measure (COPM)
- [ ] The Goal Setting and Action Planning Framework (G-AP)
- [ ] Individual team members use their own method
- [ ] The team has developed its own method

Other method (please name)

Priority levels in your team

Teams differ in the priority given to goal setting and how others are involved in the process.

19. Please rate the priority your team gives to the following (just choose the priority level you think *best* describes your team):

	No priority	Low priority	Moderate priority	High priority	Don't know
Setting rehabilitation goals	◯	◯	◯	◯	◯
Involving patients in the goal setting process	◯	◯	◯	◯	◯
Involving family members / carers in the goal setting process	◯	◯	◯	◯	◯
Including people with communication / cognitive deficits in the goal setting process	◯	◯	◯	◯	◯

Specific goal related activities used in your team

The specific goal related activities used by individual teams differ. We would like to be able to describe the range of goal related activities used with stroke patients across the UK.

20. To what extent does your team use the following goal related activities?

	Never	Sometimes	Routinely	Don't know
Give patients information about the team approach to goal setting.	◯	◯	◯	◯
Find out what patients' goal priorities are.	◯	◯	◯	◯
Set specific goals to direct rehabilitation input.	◯	◯	◯	◯
Give patients a copy of their personal goals.	◯	◯	◯	◯
Break goals down into *action plans (*may also be described as short-term goals, steps or targets etc).	◯	◯	◯	◯
Consider barriers that might hinder action plan completion.	◯	◯	◯	◯
Plan ways to overcome these barriers.	◯	◯	◯	◯
Assess patients' confidence to carry out their action plans.	◯	◯	◯	◯
Review patients' progress towards their goals.	◯	◯	◯	◯
Provide feedback to patients about their goal progress.	◯	◯	◯	◯
Down-grade or disengage from goals if progress is not being made.	◯	◯	◯	◯
Document goal setting activities.	◯	◯	◯	◯

Further Information

It is very important to us to understand why teams approach the rehabilitation process in different ways.

Goal setting is an approach that may or may not be used with stroke patients in community rehabilitation settings. We would very much like to hear why your team has chosen not to use a goal setting approach.

21. Please indicate which of the following reasons (if any) have contributed to your team not using a goal setting approach (tick all that apply).

- ☐ Goal setting is too time consuming
- ☐ Goal setting is not possible due to the short length of team input
- ☐ The patients seen by our team are not able to participate in the goal setting process
- ☐ Goal setting is not possible due to poor staffing levels
- ☐ Team members lack confidence in their goal setting skills
- ☐ Our team has not received adequate goal setting training
- ☐ Goal setting is not a valued activity within our team
- ☐ There is not enough evidence to support use of a goal setting approach
- ☐ Other reasons

Please list other reasons in the box below

Participation in future research

A survey of goal setting practice in community based stroke rehabilitation

We would like to identify teams that may be interested in participating in future research which involves the delivery of an evidence based goal setting and action planning (G-AP) framework.

22. Would your team like to get involved in this research?

- ◯ Yes
- ◯ No
- ◯ Possibly

23. Would you be happy for a member of the research team to contact you?

- ◯ Yes
- ◯ No

If yes, please provide your name and contact details (e-mail address and/or telephone number) below.

24. If you would like a copy of the survey results, please provide your name and e-mail address below

Thank you very much for taking the time to complete his survey.

Your participation is greatly appreciated and will contribute to important research that aims to enhance community based rehabilitation with people recovering from stroke.

If you would like any further information about this project, please feel free to contact me - details below.

Lesley Scobbie
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