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Attitudes toward and Experience with Assisted-death services and Psychological Implications for Health Practitioners: A Narrative Systematic Review

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Abstract:	A narrative systematic review was conducted to review studies that examine mental health implications of involvement in assisted-death services among health practitioners. Qualitative and quantitative studies were included to understand health practitioners’ attitudes and experiences with assisted dying services, as well as to identify the mental health consequences. We identified 18 articles from 1591 articles drawn from seven major scientific databases (i.e., PubMed, MEDLINE, CINAHL, PsycINFO, Embase, Web of Science, and Scopus). Two raters independently evaluated the exclusion and inclusion decisions of the articles and examined methodological flaws in the selected articles. We found that engagement in assisted death services were not reliably associated with mental health outcomes such as anxiety and moral distress. Both positive and negative outcomes were reported, and psychological outcomes for practitioners were shown to vary based on factors including social support for health practitioners’ views; their perceived capacity to care for the patients; and legislation.

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Attitudes toward and Experience with Assisted-death services and Psychological Implications for Health Practitioners: A Narrative Systematic Review

Introduction

The desire to have greater choice in end-of-life decisions for patients who have a terminal medical prognosis and experience extreme suffering has become increasingly noted across the globe. For example, Switzerland and The Netherlands have both observed a rise in the use of assisted death services within the last decade (Davis, 2019). However, although the general public seeks greater access to these services, it is important to consider the effects on practitioners' mental health who are providing such services. Practitioners may face challenges to their own well-being, beyond the potential for increased legal or professional risk.

In this systematic review, we aim to examine whether professionals who are asked to carry out assisted death services experience psychological issues (e.g., depression, distress, fear, frustration, guilt, etc.) from doing so, and whether practitioners' engagement buffers against ill-being consequences. While some scholars propose, despite being in support of end-of-life choices, that the harmful consequences of providing assisted death services cannot be avoided, the evidence of these ill-effects are mixed and potentially moderated by other factors (e.g., Georges et al., 2008; Lokker et al., 2018). We are not aware of any review that systematically examined effects of practitioners' engagement with assisted death services on distress and ill-being outcomes. The present systematic review is expected to fill this gap.

Assisted Death Services and Health Practitioners

Euthanasia, assisted suicide, Medical Assistance in Dying (MAiD), death with dignity and many other terms are used around the world, both in terms of medical terminologies and legislation to capture various types of assisted death services. In this study, we seek to use an inclusive label, “assisted death services,” to refer to any legal practice intentionally ending life to relieve pain and suffering at the patients’ request. This term could also be considered to fall on a spectrum of practices including withholding or withdrawing potentially life-sustaining treatment, assisted voluntary stopping eating and drinking, and palliative or terminal sedation.

The practices labelled “assisted death services” are morally contentious and divisive, and the legalization of assisted death services is not met with unanimous support among health professionals (Rawlings et al., 2021). Being involved in the delivery or even in the decision-making process of assisted death services may be resisted, or be associated with psychological or mental health consequences such as grief, moral distress, and frustration. However, in other cases, engagement in assisted death services under clear legislative guidance and with professional support may also lead to positive outcomes. To examine these possibilities, we conducted a narrative systematic review of studies that examined health practitioners’ well-being and mental health outcomes of engagement in assisted death services. Before we present the method and results, we briefly discuss the origins of practitioners’ attitudes toward and experiences with the services, as well as the psychological consequences to clarify the need for a systematic review examining the link.

Attitudes toward and Experiences with Assisted Death Services

Health practitioners, especially physicians and nurses, play a central role to the provision of legal assisted death services due a combination of aspects including the assessment of whether provisions of eligibility are met (e.g., terminal illness), decision making (e.g., regarding cognitive abilities), and provision of the service (e.g., by prescribing lethal medicine). However, physicians are generally less in favour of assisted death services than other community members (Rutherford et al., 2021), and opposition is stronger among those who have the most experience of palliative care (McLeod et al. 2012). Practitioners’ concerns include: concern for vulnerable populations and perceived inappropriate motives of health institutions and patients' families; concern that palliative care may not available to patients; concern about patients' decision-making processes; concern for the impact on the relationship between physician and patient; uncertainty about prognosis; and concern that assisted death services are not congruent with the roles of a treating physician (Curry et al., 2000; Georges et al., 2008; Neil et al., 2007; Rutherford et al., 2021). In addition, health practitioners' negative attitudes towards assisted death services are also strengthened by experiences with patients who disclosed motives such as their willingness to die to avoid being a burden on their family or the healthcare system (Cartwright et al., 2006).

Amongst the practitioners supporting assisted death services, the primary reasons given for endorsement are compassion in response to the patients' suffering, and support for patient autonomy (Blaschke et al., 2019; Dickinson et al., 2005; Löfmark et al., 2008). Some physicians also indicated that they may take steps to hasten death to relieve suffering for terminally ill people where no medical treatments would improve their quality of life (Rutherford et al., 2021). Patients' intractable suffering, and pain associated with the terminal stage of their illness increased health practitioners' support for assisted death services (Emanuel et al., 2016; Rutherford et al., 2021). Moreover, health practitioners' attitudes toward assisted death services have been associated with social factors such as religion and ideological affiliation (e.g., Anderson & Caddell, 1993; Gielen et al., 2009). Denominational differences have also been observed, for example such that Protestants were more likely to agree with a doctor engaging in assisted death services than Catholics (Anderson & Caddell, 1993).

In addition to examining factors associated with health practitioners' attitudes, studies in this area have explored health practitioners' experiences in providing the services (e.g., Pesut et al., 2020; Winters et al., 2021). For example, nurses' experiences were characterized by emotional ambivalence when caring for a patient requesting assisted death services (Bellens et al., 2020). Although it might be assumed that participation provided practitioners with profound feelings of professional fulfillment and opportunity to contribute to the greater good, mental health consequences such as negative feelings, frustrations, and moral distress might also arise. From a theoretical perspective, the discrepancy between findings of harmful and benign effects can be understood in terms of the challenges of involvement in normatively contested practices, which produce harm, compared to practices associated with supportive identities and norms, which are understood positively by practitioners (Amiot et al., 2020).

The present research

In light of the mixed and limited evidence concerning psychological consequences of health practitioners' engagement in assisted death services, we undertook a narrative systematic review in order to understand the findings from existing studies and derive a more integrated perspective on these observations. The research question the paper addresses is whether practitioners experience distress and illbeing in relation to their attitudes and experience with assisted death services. We included both quantitative and qualitative papers reporting health practitioners' engagement in assisted death services in relation to their psychological well-being or mental health.

Method

We follow the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) protocol for systematic review (Page et al., 2020) and registered our protocol to PROSPERO with the registration number CRD42021256079. The review was designed using pre-established criteria based on the protocol (Schiavo, 2019). We collected articles that met the criteria from databases and compiled them in a Microsoft Excel spreadsheet for data extraction. To determine the relevance, titles of the articles were screened for inclusion, followed by abstracts, with full paper screening applied to the remaining papers.

Search strategy

We conducted our search using PubMed, MEDLINE, CINAHL, PsycINFO, Embase, Web of Science, and Scopus databases. Our search strategy used combinations of the terms presented in Appendix A. Four keyword categories were used: assisted death services, engagement, mental health, and health practitioners. Each category was searched using the synonyms or the related terms linked to that category. For assisted death services, we used 'euthanasia', 'voluntary-assisted dying', 'assisted death', 'assisted dying', 'physician-assisted dying', 'medical assistance in dying', 'assisted suicide', etc. In addition, for the category of engagement, we used related terms such as 'attitud*', 'belie*', 'opinion*', 'view*', and so on.

Eligibility criteria

Any study examining health practitioners' attitudes toward, or their experience with, assisted death services, in countries or jurisdictions where access to the service was legal, and published in 2000 (i.e., around the first time when assisted death services became legal) or afterwards, was judged to meet eligibility criteria. The review included qualitative and quantitative studies examining both health practitioners' attitudes toward or experiences with assistance in dying and their mental health implications. We determined that studies with a quantitative approach could use cross-sectional, quasi-experimental, or randomized trial methods and qualitative studies could include interview or survey methods. Additionally, to be included in the review, the studies had to be published in English. The requirement that the study had to be conducted in the countries/states where euthanasia services are legal, at the time of data collection, resulted in the inclusion of studies conducted in eligible states in Australia (Victoria, Western Australia, and Tasmania), Belgium, Canada, Colombia, Germany, Luxembourg, The Netherlands, Spain, Switzerland, and eligible states in the USA (e.g., California, Colorado, District of Columbia, Hawaii, Montana, Maine, New Jersey, New Mexico, Oregon, Vermont, and Washington).

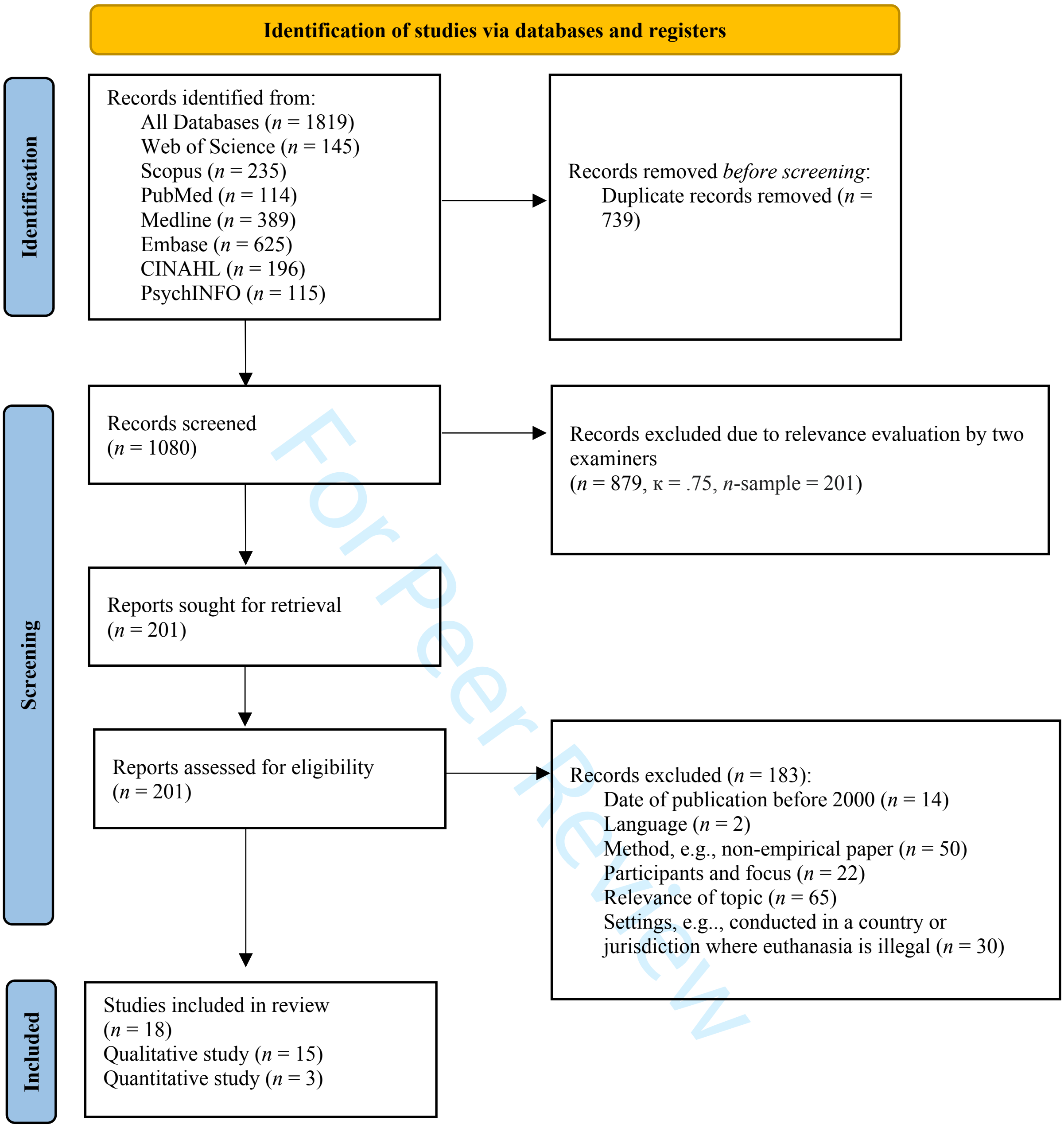
Participants or populations examined in the studies were those practitioners who could be reasonably expected to engage with patients seeking assisted death services in a professional health setting. These include, but are not limited to: doctors or physicians, general practitioners, nurses, pharmacists, psychiatrists, psychologists, social workers, and palliative care workers. Studies which collected data from early-year students in relevant fields were not included, but studies collecting data from health students (e.g., nursing students) making their placements in hospital or health units were included, given that they were exposed to situations where euthanasia services may be requested or provided.

Study selection process

Two searches were conducted along the timeline of our systematic review process: 1) Our first search in March 2021; and 2) a final search in January 2022 to capture the most recent articles published from 2021 to 2022. The identification and screening processes of the first search are presented in the flow diagram (Page et al., 2021) in Figure 1 below. The initial search strategy described above identified 1819 articles. There were 739 duplicate articles removed, leaving 1080 articles for the screening stage.

These 1080 articles were reviewed by a member of the research team for their relevance to the focus of the systematic review. Based on the title, abstract, and additional indicators related to the inclusion criteria, a further 879 articles were excluded due to their lack of relevance (e.g., the paper was not about assisted death services; the participants were not health practitioners; etc.). To examine reliability in the decision to exclude the papers during the screening process, a second coder was independently employed to screen the title and abstract for 25% (i.e., 210) of articles which were randomly sampled. Inter-rater reliability was calculated to be high ($\kappa = .75$, $p < .001$). Therefore, we used inclusion decisions of the original coder, resulting in 201 articles being retained for full text screening.

Figure 1. The flow diagram of identification and screening of the articles.



Of 201 papers judged to be relevant based on the title and abstract, we then examined the articles and applied criteria of exclusion based on early publication date (papers published prior to 2000 were excluded), English language availability (i.e., while the title and abstract were in English passing original screening, the body of the article was not), methods (e.g., non-empirical papers, literature reviews), participants and focus (e.g., patients or families instead of health practitioners), relevance of topic (e.g., did not examine the impact of attitudes toward or experience with assisted death services on practitioners' mental health/wellbeing), and setting (e.g., conducted in countries where euthanasia is illegal). Following this process, we retained 18 articles looking at the link between attitudes toward or experiences with assisted death services and aspects of mental health in health practitioners.

Quality assessment

In the quantitative studies, we assessed the risk of bias or methodological flaws through the following elements: missing outcome data, measurement of the outcome, and selection of the reported result. In the qualitative studies, we identified the presence of methodological flaws including: potential bias in participants' selection, and the condensation of participants' answers that may restrict the richness of the narratives. The assessment was conducted by two raters working independently and inter-rater reliability was employed to measure consistency across assessments ($\kappa = .71$, $p < .001$). Given the heterogeneity across the studies examining health practitioners' attitudes toward or involvement in assisted death services and their consequences, a narrative synthesis was conducted. This decision was based on the limited of robust statistical methods available for such studies.

Results

Study Characteristics

The systematic review included 18 articles published between 2000 and 2022 with three quantitative studies and fifteen qualitative studies as their main methodology. Collectively, the number of participants was 1,826 health practitioners, including 1,025 physicians, 733 nurses, 66 nursing students, and two spiritual health practitioners. The studies were representing different countries where assisted death services are legal. Those countries included Australia (1 study), Belgium (3 studies), Canada (6 studies), Switzerland (1 study), The Netherlands (3 studies), and the United States of America (4 studies).

The demographic information extracted from the articles indicated that participants differed in terms of their age (i.e., from 20s to over 50 years old), duration of work, duration of experience, ethnicities, medical specialty groups, and educational background. Most participants involved were women (89.8%). Twelve of eighteen studies focused on moral distress as the psychological implication of attitudes toward or engagement with assisted death services, while the others focused on emotional pressure and burdening, negative feelings, frustration, apprehension, powerlessness, uncertainty, job leaving, professional burnout, feeling of discomfort, moral ambiguity, emotional pressure and fear of social stigma. All quantitative studies collected the data using questionnaires, while the qualitative studies largely used semi-structured interviews and an open survey to collect data (Curry et al., 2000). The recruitment of participants in each of the studies was mostly conducted using a purposive approach with various methods, such as direct contact and snowball sampling.

In the quantitative studies, the operationalization of assisted death services was constructed via hypothetical situations to which the participants were exposed (see Table 1). Studies by Rice et al. (2008) and Piers et al. (2012) measured engagement in assisted death services by presenting the participants with two short scenarios, namely responding to patient's request for euthanasia and increasing morphine for an unconscious patient to a level believed to hasten death. In addition, moral distress was measured through self-reported intensity of distress when exposed to a situation dealing with assisted death services. In addition to moral distress as the consequence of attitudes toward euthanasia services, job leave and professional burnout were the other mental health variables that were examined in the workplace context (Piers et al., 2012).

While the quantitative research exposed the participants to hypothetical scenarios about assisted death services, qualitative research was reported based on participants' involvement in the services. As presented in Table 1, five studies (i.e., De Bal et al., 2006;

Dobscha et al., 2004; Georges et al., 2008; Ho et al., 2021; Trankle, 2014) collected the data and information from participants who have received a patient's request for assisted death services. In addition, seven studies (Beuthin et al., 2018; Lokker et al., 2018; Pesut, Thorne, Schiller, et al., 2020; Pesut, Thorne, Storch, et al., 2020; Rietjens et al., 2014; Saladin et al., 2018; Winters et al., 2021) examined health practitioners' experience with providing assisted death services, one study recruited those who care for patients requesting the service (Bellens et al., 2020), and one study recruited participants who have publicly known attitudes toward assisted death services (Mathews et al., 2021). As presented in Table 1, there were different terms used to represent assisted death services such as euthanasia (Piers et al., 2012; Rice et al., 2008), physician-assisted suicide (Curry et al., 2000; Dobscha et al., 2004), medical assistance in dying (MAiD, Beuthin et al., 2018; Ho et al., 2021; Mathews et al., 2021; Pesut, Thorne, Schiller, et al., 2020; Pesut, Thorne, Storch, et al., 2020; Winters et al., 2021), palliative sedation (Lokker et al., 2018; Rietjens et al., 2014), hastened death (Range & Rotherham, 2010; Trankle, 2014), and voluntary stopping of eating and drinking (VSED, Saladin et al., 2018).

Study Findings

The systematic review reveals mixed evidence for the implications of assisted death services on health practitioners' mental health outcomes. More specifically, Rice et al. (2008) found that 64% of participants indicated moral distress in response to a scenario about increasing morphine dosage for an unconscious patient to a level believed to hasten death and 52% of participants showed moral distress in response to a scenario about an assisted death request from patients. However, this observation was not supported by inferential statistics to infer properties of a population, and the generalisability of the sample is unknown (Piers et al., 2012; Range & Rotherham, 2010). In addition, Piers et al. (2012) concluded that exposure to assisted death services per se was not the main driver of moral distress in health practitioners. Working with partners who are not as competent as the patient care requires was reported as more stressful for health practitioners (Piers et al., 2012).

The methodological flaws analysis showed that the three quantitative articles contained some problematic elements, especially related to measurement and failure to report psychometric properties (e.g., internal reliability). The operationalization of moral distress was also not clear as the participants were presented with scenario items and responded with their hypothetical level of moral distress, which was not operationally defined (Piers et al., 2012; Rice et al., 2008). In addition, the link between attitudes toward or engagement with euthanasia services and moral distress in health practitioners was only supported by descriptive statistics.

In qualitative studies, the mental health implications of assisted death services were examined in relation to attitudes (i.e., when the participants did not have an experience with assisted death services, Curry et al., 2000), experiences in caring for patients requesting an assisted death service (Bellens et al., 2020; Pesut, Thorne, Storch, et al., 2020; Saladin et al., 2018) and experiences in accepting euthanasia requests from patients (Dobscha et al., 2004; Georges et al., 2008; Rietjens et al., 2014; Trankle, 2014; Winters et al., 2021). Those studies reported that health practitioners suffered adverse mental health outcomes such as moral distress as a result of involvement with assisted death services. However, psychological viewpoints synthesized from the studies suggested that the link between engagement in assisted death services and mental health could be moderated by legal uncertainty (Rietjens et al., 2014), perceived threats to professional standing (Bellens et al., 2020; Dobscha et al., 2004), fear of social stigma (Mathews et al., 2021), and social factors such as differences of opinion between health practitioners involved in assisted death services (Georges et al., 2008).

Additional reasons for poor mental health outcomes included perceptions that assisted death services are new and untried (Winters et al., 2021); that there is a “fine line” between legal and illegal aspects of the services (Rietjens et al., 2014); that they undermine being able to provide good care for the patient (Bellens et al., 2020); or that practitioners have an incomplete understanding of patients’ preferences (Dobscha et al., 2004). Among physicians, moral distress also was reported when practitioners feel powerless because they were no longer successful in treating patients’ symptoms or alleviating their suffering (Georges et al., 2008). In a large qualitative study involving 909 physicians, the moral distress related to their attitudes toward assisted death services was linked to perceived conflict with the Hippocratic oath, such that assisted death services were perceived as threatening the credibility of medical profession, and increasing the potential for abuse (Curry et al., 2000). In another study, nurses reported deep emotional concerns about complying with a law legalizing assisted death services while at the same time, they perceive it as morally wrong (Beuthin et al., 2018). Emotional distress and pressures also emerged when health practitioners were exposed to particular situations, such as the legal requirement to be with the patient and their family until they die (Winters et al., 2021). Moral distress emerging from experiences with assisted death services was also related to the lack of accessibility to palliative care for patients, and the lack of sufficient collegial support (De Bal et al., 2006; Pesut et al., 2020).

The findings of qualitative studies also suggested that moral distress associated with assisted death services was not only invoked because of involvement in providing assisted death services, but also in the event that health practitioners were confronted with the mere request for the services (Georges et al., 2008). Decisions about whether/not to enact assisted death services require careful decision making, taking into account legal and organisational aspects (e.g., how a health practitioner’s view might be different from their fellows’ in considering the approval or rejection) as well as psychological impacts on the patient’s family members. When physicians deal with this type of situation, they may experience moral distress and choose to evade considering or approving the requests as an avoidant coping mechanism (Georges et al., 2008).

The qualitative studies thus suggest key factors that could broadly explain the implications of engagement with assisted death services on health practitioners' mental health. These include perceived conflict and potential for abuse, specific regulations about euthanasia services in the country, professional norms, and collegial support. To further extent knowledge about the psychological implications of engagement in assisted death services, quantitative studies examining the role of those potential factors on the implications of engagement in assisted death services on moral distress or other outcomes are necessary in future research.

Discussion

The systematic review aimed to synthesize the findings of studies on health practitioners' engagement in assisted death services, and their mental health outcomes in countries or jurisdictions where such service are legal. Existing systematic reviews have been mostly focused on examining the determinants of health practitioners' attitudes and their experiences, without linking them to their psychological implications (e.g., Brooks, 2019; De Bal et al., 2006; De Bal et al., 2008; Dickinson et al., 2005). The present review is therefore a novel contribution to the literature by examining practitioners' distress and ill-being, and exploring the role of engagement in assisted death services as factors that may influence health practitioners' mental health or well-being.

The analysis of three quantitative articles found no strong overall evidence of an association between engagement in assisted death services and mental health outcomes (e.g., frustration, anxiety, fear of abuse, and moral distress). Where such associations were reported, the quality of the data was limited by the absence of psychometric information and inferential statistics inferring properties of a population (Piers et al., 2012; Rice et al., 2008). One study that did report a bivariate correlation to examine the association between attitudes toward assisted death services and moral distress indicated a non-significant result (r = .03, Range & Rotherham, 2010). Taken together, therefore, the quantitative studies do not provide a strong foundation for inferring that there is any overall impact of provision of assisted death services on practitioners.

However, in the other studies (i.e., those employing qualitative approaches), significant moral distress and ill-being outcomes were reported. The moral distress health practitioners feel about assisted death services is also found to be influenced by the broader context in which those services were administered (Lokker et al., 2018; Oliver et al., 2002), the situations that were not captured in the quantitative studies. When health practitioners have different opinions or considerations in regard to how the services should be decided and delivered, this professional conflict is distressing (Lokker et al., 2018; Patel et al., 2019). In addition, moral distress may arise from pressure experienced during decision-making and service provision from practitioners' colleagues, or from family members of the patient who is requesting assisted death services (Lokker et al., 2018).

Although the studies provided potential suggestions about the triggers for moral distress and other ill-being in the context of assisted death services, some methodological flaws were of concern. The potential for self-selection bias in the recruitment of participants were frequently acknowledged by the authors (e.g., Bellens et al., 2020; Rietjens et al., 2014; Trankle, 2014) as well as some internal validity issues (e.g., the long distance between the participants' involvement in assisted death services and the data collection conducted, or the use of a single case study). In this sense, the systematic review results highlight the need for future research with large samples, inclusive recruiting, reliable measurement, and detailed reporting.

The lack of attention to other psychological outcomes is also a concern in the present data. Moral distress as the most frequently measured mental health outcomes of health practitioners' involvement in assisted death services has been argued to be a natural response to morally troubling experiences that should be welcomed (Morley, 2018). Moral distress contains two components, namely psychological distress, and a moral event such as making a decision about an assisted death request or even involvement in providing the service (Morley, 2018; Byrnes et al., 2022). Because assisted death services are publicly debated and can conflict with professional as well as traditional or religious values, health practitioners' involvement in the service will likely continue to be seen as a moral event that stimulates a degree of psychological distress and perhaps fear of social stigma (Mathews et al., 2021). However, whether that constitutes a wholly negative outcome is open to discussion. Practitioners may use the distress as a prompt to reflection and more thoughtfully resolve to persist in (or discontinue) the practice, for example. In addition, distress would not be seen as a negative mental health outcome if it deterred respondents from future participation in assisted death services, from the perspective of their opponents. Thus, moral distress may not be the only or optimal measure for mental health consequences of engaging with assisted death services; other measures of anxiety, distress, professional commitment, trauma, depression and suicidality may be directly relevant. Cross-sectional and longitudinal research concerning these outcomes will be of great value.

The findings that mental health outcomes are related to both personal and social determinants have implications, for example concerning the role of social norms in alleviating (or strengthening) moral distress. Although decision making in assisted death services draws on individual practitioners' ethical consideration, the social supports from health communities (e.g., fellow health practitioners, palliative care management, state policies, etc.) shape this deliberation, and affect the likelihood of harmful outcomes.

Ongoing norm conflict and opposition from institutions and professional bodies may increase practitioner risk, for example. Testing the role of supportive identities and social norms (e.g., Crane et al., 2018) as a possible protector against negative mental health outcomes of providing euthanasia services is an interesting direction for future studies.

A final limitation important to acknowledge in the present research is the lack of comparative analysis examining different types of assisted death services across and within countries. The conditions under which assisted death services are legalised vary between nations, and even between states or provinces (Bellens et al., 2020; Verhofstadt et al., 2020). For example, Colombia and Quebec permit only health care provider administered assisted death services while Switzerland permits only self-administered assistance in dying (Downie et al., 2021). The impact of this variability on the experiences of health practitioners and the mental health consequences is an important direction of future research.

Conclusion

The present review is the first one conducted on this important topic, and uses pre-registered, established, and rigorous PRISMA protocols, with two raters to evaluate the inclusion decision of the articles collected from the scientific databases and to examine the methodological flaws. The data address a novel and important theoretical question: the capacity of practitioners to adapt to a normatively contested context without implications for distress and ill-being. However, the systematic review was limited by the fact that few studies were discovered. Both a low number of studies and insufficient psychometric information provided mean that the evidence basis at present is weak. Taken at face value, the data do not confirm the hypothesis that attitudes or experiences with assisted death services per se are consistently associated with ill-being outcomes. Considering the prevalence of legalization of assisted death services and the importance of supporting the health and safety of health practitioners as well as community members, future scientific attempts to understand the implications of attitudes toward and engagement in the services on practitioners' mental health are necessary.

Declaration of Interest

The authors declare that the work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Table 1. Review of studies examining the mental health outcomes of health practitioners’ engagement with assisted death services.

Author(s)	Participants (*N*) Countries	Recruitment	Design of study and data collection	Type of assisted death services	Level of participants' involvement	Mental health outcomes	The evaluation of mental health indicators	Methodological flaws
Rice et al., 2008	Medical and surgical nurses (*n* = 260) South-west of the USA	The study was performed at an adult acute tertiary care hospital, where the principal investigator administered the survey questionnaire to all medical and surgical nurses on-site on each nursing unit’s education day.	Quantitative design with questionnaires as data collection tools and non-parametric statistic (i.e., Wilcoxon/Kruskal-Wallis tests) as the analytical technique.	The assisted death service was called as euthanasia in the article, and was manipulated in the questionnaire via hypothetical situations in which a) the nurses were ordered to increase the dose of intravenous morphine for an unconscious patient that they believe will hasten the patients’ death, and b) the nurses were asked to respond to a patient’s request for assistance with suicide when the patient has a poor prognosis.	No information about the participants’ involvement in assisted death service. The participants’ criteria are to be medical and surgical nurses in the site where the research was conducted.	Moral distress	Intensity and frequency of moral distress when the participants think about being ordered to increase the dose of intravenous morphine for an unconscious patient that they believe will hasten the patients’ death, and being asked to respond to a patient’s request for assistance with suicide when the patient has a poor prognosis. The research found that the percentage of participants indicating moral distress related to the euthanasia situations was 64% for increasing the dose of morphine and 52% for responding the patient’s euthanasia request. In addition, the intensity of moral distress was uniformly high for situations related to physician practice, nursing practice, institutional factors, futile care, deception, and euthanasia.	1) The psychometric properties of the scales were not reported; 2) Moral distress as an outcome was not operationally defined to the participants. Participants were asked to measure their self-perceived ‘moral distress’; 3) All results from the data analysis were reported. However, the analysis of the scenarios was presented as descriptive and exploratory rather than based on clear hypotheses.
Piers et al., 2012	Nurses providing geriatric care (*n* = 222) Belgium	Data were gathered in nurses working in acute geriatric care in 3 different hospitals and in 20 long term care facilities for the elderly in Flanders, Belgium.	Quantitative design with questionnaires as data collection tools and parametric statistics (i.e., Linear Regression) as the analytical technique.	The assisted death service was called as euthanasia in the article, and was operationalized through participants’ response to hypothetical situations in which they 1) respond to patient’s request for euthanasia; and 2) increase morphine in an unconscious patient believed to hasten death.	Participants were not directly involved in assisted death service, but evaluating hypothetical scenarios.	Moral distress, Job leaving, Professional burnout	To measure moral distress, participants rated their moral distress for the two items of assisted death services. Each item was rated in frequency (0-4) and intensity (0-4). Job leave was measured by a single item, but the range of scale was not presented. Burnout was measured with 20 items of Maslach Burnout Inventory, Human Services Profession version, with a 7-point response scale from 0 to 6. The research found that responding to patients’ requests for euthanasia, as well as	1) The psychometric properties of the scales were not fully reported; 2) Moral distress as an outcome was not operationally defined for the participants. The measurement for moral distress variable used two columns of responses representing the frequency and intensity of moral distress in 18 situations related to

							increasing the morphine dosage to hasten to death for an unconscious patient, were not the main factors associated with moral distress in nurses.	nurses' work settings. Therefore, the association between euthanasia and moral distress is not inferentially examined, but scaled by comparing it with the other situations in which nurses engage. 3) The analysis of the association of assisted death services and mental health factors (moral distress, job leaving, and burnout) was presented as descriptive and exploratory rather than based on clear hypotheses.
Range & Rotherham, 2010	End-year nursing students (*n* = 66) New Orleans, Louisiana.[1]	The researchers distributed questionnaires on campus during class for some participants and after class for others. Students who were in class received a small amount of extra credit for participating, however, students who were outside class received no incentives for participating. All participant completed the questionnaires anonymously while the researcher waited.	The design of the study was quantitative with correlational methods.	Hastened death	Participants were not directly involved in assisted death services. Assisted death was represented through hypothetical scenarios in which the participants were asked to imagine that they were terminally ill and expressed desire for hastened death.	Moral distress	The Moral Distress Scale was measured by 30 items describe moral dilemmas that nurses are likely to face in their practice (e.g. 'provide better care for those who can afford to pay than those who cannot'). A 7-point Likert scale was used from 0 to 6. In the results, a Pearson correlation indicated that moral distress was not significantly correlated with attitudes towards hastening death, $r(45) = .03$, $p = .880$.	1) The number of participants involved in the data analysis process was not mentioned. In addition, there was no reason provided regarding why the number of participants involved in the correlation analysis was 45 people from 66 recruited participants. 2) No psychometric properties explained to support the validity and reliability of the measurement process 3) The analyses are descriptive and

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[1] Louisiana made a distinction between a physician proactively ending a patient's life (which is not permitted) and passively refusing or removing life-saving medical treatment (which is permitted).

								exploratory, rather than based on clear hypotheses.
Trankle, 2014	Physicians (*n*= 13) Australia	Direct contact with 16 physicians and 13 agreed to participate. One participant was known personally to the author, some were selected through their professional register, and some others because of their published research.	Qualitative research with semi-structured interviews	Hastened death	Direct experience of participants with patients' and families' request for euthanasia to end suffering	Emotional pressure	The emotional pressure was uncovered through participants' description of a situation in which they considered a decision to shorten the life of a dying patient who was suffering intractably. The emotional pressure was mostly coming from patients and their loved ones requesting hastened death. They often beg or plead with the physician to be compassionate and bring about a hastened death to end suffering.	There is a potential of self-selection bias. Experiences related to hastening death are known to be diverse among physicians, but the data uncovered in this research showed high similarity.
Rietjens et al., 2007	Nurses (*n* = 16) The Netherlands	Nurses were recruited through a short presentation in their regular meeting. The participation was voluntary, and the interviewer was not in any way related to the nurses.	Qualitative research with semi-structured interviews	Palliative sedation	The nurses have been involved in palliative sedation, as indicated by the question used about their most memorable case of palliative sedation in the past.	Moral distress	The moral distress was uncovered through the participants' statement, and their thought that palliative sedation may have a life-shortening effect. They are struggling the most with the "fine-line" between palliative sedation and illegal elements of the euthanasia.	The reports from participants are based on their perceptions and memories of deaths that sometimes occurred up to five years previously. The memorable cases may not be generalizable.
Saladin et al (2018)	Registered nurses, ward manager, nursing manager, and nursing expert who accompanied a 49-year-old woman ended her life prematurely through Voluntary Stopping of Eating and Drinking (VSED), *N* = N/A Switzerland	The authors assigned the practitioners involved in VSED for a 49-year-old woman into four groups and explored their experiences.	Qualitative study with single case study	Voluntary stopping of eating and drinking (VSED)	Participants were directly and indirectly involved in the VSED. The attitude toward VSED depends on the personal attitudes and the culture of institution. When they perceive VSED as a suicide (has a life-shortening effect), their rejection will be higher, but when they perceive it as a natural dying, their acceptance will be higher.	Moral distress	Data collection was conducted through 'guided conversation' interviews and Focus Group Discussion with the nurses. Moral distress was indicated expressed by nurses who struggled with concern for the patient and a dilemma between respecting the patient's wish to die and the hospital management. Among ward managers, the moral distress concerned ambivalence and uncertainty about how to carry out their duty to help the patient.	The model was derived from a single case study. Therefore, there is a lack of evidence-based support to generalise the generated model to broader context.

Bellens et al., 2019	Nurses who had experience with caring for patients requesting euthanasia (*n* = 26) Belgium	Purposive and snowball sampling	Grounded theory design with semi-structured in-depth interviews.	Euthanasia (defined as an act undertaken by a physician to intentionally end a person's life at his or her request).	The nurses had extensive experience in caring for patients requesting for euthanasia	Negative feelings and frustration	Some participants described strong feelings of frustration (anger, irritation, indignation) for not being able to provide adequate care for a patient requesting euthanasia. Most frustrations were related to the difficulty of nurses to understand the reasons behind a patient's request for euthanasia and they take the perspective of the patient's relatives. The way the euthanasia care process was performed and/or organized could also evoke feelings of frustration. For example, when the doctor ignored the euthanasia request of the patient or acted rudely or dishonestly toward the patient and their family, nurses felt angry and powerless.	The authors did not theoretically select the participants or sample participants with variation in their attitudes towards euthanasia. The nurses who participated in the study had positive attitudes toward euthanasia.
Dobscha et al (2004)	Physicians (*n* = 144) indicated they had received a patient request for assisted suicide. Seventy-three of them indicated they were interested in being interviewed. Of the 73 physicians, 23 were no longer interested in participating, 13 had not actually received a request, 1 was considered to live in a location too remote for an in-person interview, and 1 served as practice interviewee. The USA	The recruitment was conducted through a postal survey of physicians regarding their experiences with the 'Death with Dignity' act. Response rate = 47.9% (35 of 73 physicians).	Grounded theory design with semi-structured in-depth interviews.	Physician-assisted suicide	The participants have received requests for assisted suicide and some of them were willing to prescribe	Apprehension and feelings of discomfort	Prominent sources of discomfort included concerns about adequately managing symptoms and suffering, not wanting to abandon patients, and incomplete understanding of patients' preferences, especially when physicians did not know patients well. Physicians did not express major regrets about their decisions regardless of whether they prescribed or not. Discussing important issues related to the request can increase their confidence.	Physicians who are willing to prescribe euthanasia were overrepresented in the sample (60% vs 40%).

Georges et al., 2008	General Practitioners who have experience with end of life care (*n* = 30). The Netherlands	The participants were GPs selected from participants in a nationwide study of end-of-life decisions who expressed their interest to participate in further interview study. Of 125 GPs who were interested to participate, 81 GPs were randomly selected, and from that number, 31 GPs were purposively selected based on their attitude for being restrictive towards euthanasia.	Qualitative research with structured interviews	Euthanasia (defined as intentionally hastening a patient's death on their request).	The participants have received requests for euthanasia from their patients	Moral distress and emotional burdening.	Nearly half (14/30) of the GP strive to avoid euthanasia because it was against their personal values or it was emotionally burdening to be confronted with this issue. In addition, the moral dilemma could occur because they were feeling powerless as a GP and because they were no longer successful in treating the patient's symptoms or alleviating their suffering.	The participants were chosen purposively. The sample was comparatively homogeneous (pro-euthanasia) and may not reflect a representative range of attitudes and outcomes.
Curry et al., 2000	Physicians (*n* = 909) USA	Anonymous questionnaires sent to the participants' address as available in the governmental database.	Qualitative research with open response survey.	Physician assisted suicide	N/A	Moral distress	Some participants expressed distress related to their Hippocratic oaths (i.e., the importance of physicians' duty to cause no harm, PAS perceived as threatening the credibility of the medical profession), as well as the potential for abuse (i.e., in vulnerable populations, where financial incentives exist). However, supporters of euthanasia expressed positive outcomes from their participation (alleviating suffering).	Firstly, the study was not explicitly designed as qualitative study. Therefore, there were differences among those who chose to provide a written comment and those who did not. The participants offering narratives to the single open-ended question were more likely to have personal convictions (most often in opposition to physician-assisted suicide), affecting the generalizability of the results.

Beuthin et al., 2018	Nurses working across settings including acute care, residential care, primary care clinics, and community and palliative care (*n* = 17) Canada	Recruitment occurred via a poster distributed across the local Health Authority. Researchers also asked local contacts at hospitals to make an announcement about the study at an appropriate staff meeting.	Thematic analysis with semi-structured interviews	Medical Assistance in Dying (MAiD)	Of the 17 participants, 15 had experience with MAiD. Two participants had no patient involvement and claimed a conscientious objection.	Moral distress	Nurses who perceived MAiD as morally wrong expressed deep emotional concerns about complying with its legalisation, feeling choked up or shedding tears. In addition, fears of being stigmatized, labelled, and isolated were also expressed by the nurses who conscientiously objected to assisted dying.	The authors highlighted that participants were challenged in describing the complexity of their emotions makes them difficult to find effective words for the paradoxical experience of witnessing death that is both "sad" and "beautiful". These add to the usual sampling issues to increase the risk that the themes explained through the research do not represent the nurses' emotional situations generalizably.
Pesut et al., 2020	Registered nurses and nurse practitioners (*n* = 59) Canada	Recruitment occurred via bulletins that were distributed to key stakeholders and prospective participants using convenience, purposive, and snowball sampling techniques.	Qualitative research with semi-structured interviews.	Medical Assistance in Dying (MAiD)	Some participants had previously cared for patients requesting or receiving MAiD, and some others had decided not to participate in the MAiD process.	Moral distress and uncertainty	Some nurses who personally supported MAiD were choosing to limit their involvement because they perceived an absence of adequate practice supports. In addition, nurses felt morally distressed when they perceive lack of accessible palliative care, and a supportive team that allow them to have a range of responses to MAiD.	The sampling impairs researchers' ability to generalise the results.
De Bal et al., 2006	Nurses who have ever received a request for euthanasia (*n* = 15) Belgium	The researchers presented the study protocol to the hospitals to seek permission to conduct the study. Further, the researchers selected and informed a contact person in each hospital. The contacts then approached nurses who met the criteria.	Grounded theory design with semi-structured in-depth interviews.	Euthanasia (defined as intentionally hastening a patient's death on their request).	All participants had received a euthanasia request in the year prior to the study	Powerlessness and frustration	Nurses became frustrated if the physician focused primarily on curing the patient and ignored the euthanasia request or resisted palliative care support. Some nurses felt unable to discuss the patients' therapeutic regimen with the attending physician.	Selection bias: The researchers delegated the selection of participants to the contact person from the hospitals, affecting the generalizability of the results.
Lokker et al., 2018	Nurses working in hospital, nursing home or primary care (*n* = 36). The Netherlands	As the follow up of the prior survey study collected data from 185 nurses about their most recent case of continuous palliative sedation. In the questionnaire, respondents were asked if they were willing to participate in an	Qualitative research with semi-structured interviews.	Palliative sedation	The participants have been involved in palliative sedation.	Moral distress	Some nurses reported situations where they experienced pressure to be actively involved in the provision of palliative sedation when they felt this was not in the patient's best interest. This situation is mostly related to (1) starting palliative sedation when the nurse felt not all options to	Sampling bias (36 participated from 185) is detected. The original data collection was not aimed at achieving saturation of information on the topics studied, raising the

		additional qualitative interview. In total, 36 nurses indicated willingness and were subsequently interviewed.					relieve suffering had been explored yet; and (2) family requesting an increase of the sedation level where the nurse felt that this may involve unjustified hastening of death.	possibility of missing relevant information.
Pesut et al., 2020	Nurses from across Canada (*n* = 59) Canada	Purposive and snowball sampling were used to recruit participants through health regions, and nurses' associations. Data collection was conducted by telephone or in-person, by the principal investigator and/or research coordinator, using a semi-structured interview guide that was piloted and revised prior to data collection.	Qualitative research with semi-structured interviews	Medical Assistance in Dying (MAiD)	To be eligible to participate, nurses had to be registered nurses or nurse practitioners who had some experience with participating, or choosing not to participate, in MAiD.	Moral distress and uncertainty	The nurses who had troubling experiences were often those who were involved in multiple MAiD deaths or who did so without sufficient collegial support. In addition, experiencing an overwhelming flood of emotions after a MAiD provision was not uncommon. For example, a MAiD provider described being unable to stop weeping after a death. Another participant described going back to her car after a provision and being unable to function.	The sampling affects the generalizability of the results.
Ho et al., 2021	Physicians (*n* = 7), nurses (*n* = 12) and spiritual health practitioners (*n* = 2) from Canada.	Purposive sampling was used to recruit a range of multidisciplinary palliative and hospice care providers (PHCP) with experience supporting patients who have made MAiD requests.	Qualitative method with interview as the primary tool in data collection.	Medical Assistance in Dying (MAiD), which was described as the law that legalizes physicians and nurse practitioners to assist eligible and consenting patients to die by clinician-administration or self-ingestion of lethal medication under spcific safeguards.	Participants have experience responding to MAiD requests and refined accordingly.	Moral ambiguity and distress.	Mental health indicators were explored through interview with the participants. Moral ambiguity was experienced related to the legalization of MAiD itself. In addition, participants also reported moral ambiguity when they feel challenged with inquiries from the patient's families. In addition, the distress theme was also found when the participants think about the patients' reasons for requesting MAiD (e.g., lonely and do not have a lot of social connection) and procedural safety requirements (e.g., a 10-day waiting period which can impede patient's well-being).	The use of face-to-face and/or phone interview might have been more reporting bias compared to anonymous questionnaire. In addition, the participants were recruited from one diverse urban area of Canada, and mostly female and supporting of MAiD legalization.

Mathews et al., 2021	Physicians (*n* = 10), nurses (*n* = 13) Canada	Pusposive sampling was used to recruit participants with diverse personal views and experiences with MAiD	Qualitative descriptive using semi-structured interviews and thematic analysis	Medical Assistance in Dying (MAiD), defined as the administration of a lethal substance by a medical practitioner to a consenting person to intentionally cause their death, or prescribing a substance that the eligible person takes themselves, in order to bring about their own death.	Participants (palliative care providers) do not have to ever be involved in MAiD, but they have a publicly known opinions and views about the legalisation of MAiD.	Uncertainty and fear of social stigma	Mental health factors were found through the interviews. Some participants described uncertainty and fear of social stigma around their involvement in MAiD. They were also fearful of negative social perception as a social consequence of working in settings where assisted death is provided. However, some participants described a sense of personal and professional satisfaction for supporting the patient's request.	Participants received the interview questions in advance, and it might have resulted in unintentional self-censoring. In addition, participants were geographically limited to urban areas in Southern Ontario and working in relatively highly resourced settings, such that the results may not be generalizable to less-resourced rural settings.
Winters et al., 2021	Physicians (*n* = 21) Canada	Purposive sampling began with the researchers' initial networking followed by a snowballing to recruit doctors in diverse regions and practice settings.	Qualitative design using open and semi-structured interview as data collection method and Interpretive phenomenological approach as the analytical tool.	Medical Assistance in Dying (MAiD) as legally mentioned in Canadian legislation.	The participants had directly participated in MAiD provision including the final step of administration of the lethal agent.	Emotional distress and pressures	The mental health consequences of MAiD were mentioned in the interview. Emotional distresses were associated with some situations, including the law that requires the physicians to be with the patient until they die, the immediate decision from the patient to request for MAiD, the fluctuating health condition of the patients requesting MAiD, and patient difficulty accessing services and providers.	The researchers acknowledge that the findings cannot be generalized to all practitioners across all settings due to the nature of qualitative research. In addition, the condensation of participants' stories into manageable quotes can mute the richness of the narratives.

Appendices.

Appendix A. Combinations of the terms used in search for the articles within databases

SPIDER	Topic	Terms
Sample	Health practitoners	Doctor* OR Nurse* OR Pharmacist* OR Social work* OR Medical pract* OR Health pract* OR Physician OR Psychiatrist OR Psychologist OR General pract* OR Palliative care
Phenomenon of Interest	Assisted death services	Euthanasia OR Assisted death OR Assisted dying OR Physician-assisted dying OR Medical assistance in dying OR Assisted suicide OR Medical-assisted suicide OR Physician-assisted suicide OR Dying with dignity OR Voluntary assisted dying OR Voluntary assisted death OR Voluntary assisted suicide OR Palliative suicide OR Hastened death OR Aid in dying AND Depress* OR Distres* OR Fear* OR Frustrat* OR Guilt OR Secrecy OR Personal conflict OR moral uncertainty OR Suicidality OR Anxiety OR Burnout OR "Professional identification" OR Turnover OR "Job satisfaction" OR Well-being OR Compassion OR Coping OR Empathy OR "Empathic concern" OR "Empathic distress" OR "Perspective taking" OR "Cognitive empathy" OR "Affective empathy" OR "Sacredness of human life".
Design		Quantitative: cross-sectional, quasi-experimental, or randomized trial design Qualitative: interview or survey methods
Evaluation	Engagement	Attitud* OR Belie* OR Opinion* OR View* OR Support OR Opposition OR Opponent
Research types		Qualitative or Quantitative study