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Alexandre Filipe Gonçalves de Sousa

Eutanásia e crenças espirituais em estudantes de medicina / Spiritual beliefs and euthanasia: a study on medical students

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Alexandre Sousa

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NOME

Alexandre Filipe Gonçalves de Sousa

NÚMERO DE ESTUDANTE	E-MAIL
up201402868	Alexandre01sousa@hotmail.com

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Miguel Bernardo Ricou da Costa Macedo

COORIENTADOR (se aplicável)

Sílvia Marina Amado Cordeiro

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Faculdade de Medicina da Universidade do Porto, 12/03/2020

Assinatura conforme cartão de identificação: Alexandre Sousa

Aos meus pais

Introdução

A presente dissertação insere-se no âmbito do Mestrado Integrado em Medicina da Faculdade de Medicina da Universidade do Porto.

Nos últimos anos, tem-se observado um aumento da discussão pública acerca da morte antecipada, que inclui a eutanásia e o suicídio assistido (Marina, Costa-Maia, & Ricou, 2019[i]). Em Portugal, decorreram dois momentos de discussão mais intensa, a propósito das votações parlamentares de projetos de lei com vista a despenalizar a prática de eutanásia no país (2018 e 2020). A aprovação dos projetos de lei teve lugar a 20 de fevereiro de 2020, pelo que importa mergulhar nas várias questões éticas que esta prática pressupõe.

A posição do ser humano perante dilemas éticos que envolvem valores tão fundamentais como a Vida e a Morte será, necessariamente, produto de uma complexa constelação de fatores. Mas, enquanto alguns destes fatores serão mais acessíveis, que outros determinantes implícitos imergidos no nosso ser poderão, em última análise, modular a resposta explícita a dilemas tão complexos como o da eutanásia? Quando falamos de antecipação da morte, é natural que nos surjam, entre outras, algumas questões do foro existencial. A vida depois da morte, a existência de outras dimensões físicas ou espirituais, a existência da mente de forma independente ou o simples propósito da nossa existência – são questões cujas respostas são de caráter necessariamente especulativo e que residem para lá dos limites da Ciência atual. De qualquer das formas, o facto é que cada um de nós está quase inevitavelmente condenado a questionar-se e, como tal, cada um de nós tem crenças e valores imbuídos nas profundezas da nossa personalidade relativamente a estas questões. Para lhes dar resposta, servimo-nos de fatores psicológicos e socioculturais, que, assim, movem o sentido das nossas crenças a respeito do Metafísico (Bautista, Escobar, & Miranda, 2018; Jack, Friedman, Boyatzis, & Taylor, 2016; Nelson, Abeyta, & Routledge, 2019;).

A questão impõe-se: como poderão estas crenças que temos, de ordem fundamental e de cariz espiritual, estar relacionadas com a forma como respondemos a dilemas que invocam, precisamente, as mesmas questões do foro existencial que, durante toda a vida, nos temos colocado a nós próprios? Parece ser obrigatória a existência de uma relação, mas tantos outros fatores entram em jogo, dificultando a interpretação da mesma – a religião, desde logo, enquanto construto sociocultural que visa colmatar esta falta de respostas relativamente a questões existenciais com crenças e conceitos predefinidos.

Assim, o presente estudo foi conduzido para procurar compreender se crenças espirituais comuns, religiosas ou não, poderão estar na base da posição individual relativamente a dilemas como o da eutanásia. Este trabalho será apresentado em duas partes: primeiro, apresenta-se o estudo empírico desenvolvido para procurar responder ao objetivo indicado; de seguida, demonstra-se o processo de criação e validação da escala de concordância com crenças espirituais em estudantes de medicina.

1 – Spiritual beliefs and euthanasia: a study on medical students

Resumo

Esta dissertação debruça-se sobre o impacto de crenças espirituais comuns, relacionadas com questões metafísicas, na concordância com a eutanásia. Foi obtida uma amostra de 497 estudantes de medicina portugueses. Foram avaliadas as diferenças entre os sexos e entre afiliações religiosas, analisou-se a associação entre as crenças espirituais e a opinião relativamente a casos de eutanásia, e indicam-se possíveis preditores de concordância com a eutanásia. Os participantes mostraram-se maioritariamente a favor da eutanásia. A afiliação religiosa formal e altos níveis de religiosidade foram associados significativamente com menor concordância com a eutanásia. Foi encontrada uma associação estatisticamente significativa entre todos os cenários de eutanásia e múltiplas crenças espirituais. Várias crenças espirituais constituíram preditores de concordância com eutanásia. Discutem-se as implicações da religião e da espiritualidade na concordância com a eutanásia. Estudos futuros serão necessários para melhor compreender o verdadeiro peso da espiritualidade na opinião individual relativamente a este dilema ético.

***Palavras-chave**:* eutanásia; suicídio assistido; crenças espirituais; espiritualidade; estudantes de medicina

Abstract

This study focuses on the impact of common spiritual beliefs regarding metaphysical questions in agreeability with euthanasia. A sample of 497 Portuguese medical students was collected. Differences between genders and religions, predictors for agreeability with euthanasia and the association between spiritual beliefs and opinion towards euthanasia cases were assessed. Respondents were mostly favourable to the practice of euthanasia. Formal religious affiliation and higher levels of religiosity significantly associated with lesser agreeability with euthanasia. Statistically significant association was found between every euthanasia scenario and multiple of the spiritual beliefs presented. A number of spiritual beliefs were predictors of agreeability. We discuss the implications of religion and spirituality in agreeability with euthanasia. Further research is required to better understand the true weight of spirituality in one's opinion towards this ethical dilemma.

***Keywords**:* Euthanasia; Suicide, Assisted; spiritual beliefs; Spirituality; Students, Medical

Spiritual beliefs and euthanasia: a study on medical students

Introduction

Life and death pose ever-confusing questions to the human being. The immaterial, mysterious, and subjective nature of these topics has left us wondering ever since we knew ourselves. It could be that our famed advanced intelligence is too limited to understand the full scope of such fundamental issues. That is why it is perhaps utopic to think that we could reach universal agreement on these matters. Nevertheless, they permeate our everyday life in such a way that it is not possible – nor even ideal – to avoid them. As a matter of fact, we ought to make collective decisions about them, although virtually everyone has their own personal opinions and beliefs.

When medicine was born, it was in perfect alignment with the reigning world views, coincident with those of traditional religions: Life is sacred and should be preserved in every circumstance (Chakraborty, El-Jawahri, & Litzow, 2017). Fast forward several thousand years. We have reached a point where we live longer than ever before and can cure or treat most short-term deadly diseases. This inevitably translates into our population being increasingly older and living with chronic diseases (Hardwig, 2014). These are often gradually debilitating, breeding disabilities and suffering, both physical and psychological. Accordingly, medicine oftentimes itself is part of the reason why there is the possibility of maintaining a dependent life in the first place – a life all too dependent on external help, such as invasive ventilation or feeding (Donald Boudreau & Somerville, 2013; Felix et al., 2013; Rousseau, 2017). As medicine advances, it may appear that, in some cases, all this scientific innovation has not been extending life, but merely lengthening the process of dying (Rizzo, 1996). Moreover, health costs at the very end of life increase in a rather drastic fashion (Marsala, 2019). This brings about new challenges and controversial questions that populations of the past did not need to face. It is as if, in some cases, medical care could be regarded as a futility – a costly one.

At the same time, although religion is still important to most people in the West (Stempsey, 2010), societies are becoming increasingly secular (Ammerman, 2007; Chaves, 2011; Elder & George, 2016; Schwadel, 2010, 2011), in terms of both religious affiliation and religiosity (Cohen, Marcoux, & Bilsen, 2006; Danyliv & O'Neill, 2015; Marsala, 2019). The reasons seem to span from the debunking of the literal meaning of many religious stories by advances in science to strong movements of anthropocentrism and the decay of old values and traditions; we seem to be witnessing a modern renaissance of values in which individual rights such as freedom, autonomy, and self-determination are more dear to today's societies than are older traditions and values – and even life itself (Cohen et al., 2006; "Compassion in Dying v. State of Washington," 1996; Donald Boudreau & Somerville, 2013; Fraser & Walters, 2002). The discussion around abortion renders that clear. People now seem to value the possibility of choice more than they do the new-formed life (Sambaraju, Sammon, Harnett, & Douglas, 2018).

From this background arise new and important ethical questions about how people are treated, how animals are treated, and what the socially acceptable limits (if any) of medicine should be (Jansen, 2002; Pinto, 1993; Sunstein & Nussbaum, 2005). One of the most emergent topics of debate in modern societies is that of euthanasia (Bulmer, Böhnke, & Lewis, 2017; Siden, 2005). Important arguments have been raised on both ends of the discussion (Math & Chaturvedi, 2012; Ricou & Wainwright, 2019). Euthanasia is a form of hastened death and is defined as the act of deliberately ending an individual's life to relieve their suffering (National Health Service [NHS], 2017). Assisted suicide, on the other hand, refers to the act of deliberately assisting another person in killing themselves – Physician Assisted Suicide (PAS) would occur, then, in the scenario in which a doctor provides a patient with a lethal dose of pills that the patient can ingest and, thus, kill himself. Euthanasia is currently legal in Belgium (Loi Relative à l'euthanasie [Euthanasia Law], 2002), Canada (Offences Against the Person and Reputation Medical Assistance in Dying, 2019), Colombia (El Derecho a Morrir

Con Dignidad [The Right to Die With Dignity], 2015; Derecho a Morrir Con Dignidade de Los Niños, Niñas y Adolescentes [Children and Teenagers' Right to Die With Dignity], 2018), Luxembourg (Legislation Reglementant Les Soins Palliatifs Ainsi Que L'Euthanasie et L'Assistance Au Suicide [Legislation Regulating Palliative Care as Well as Euthanasia and Assisted Suicide], 2009), the Netherlands (Wet Toetsing Levensbeëindiging Op Verzoek En Hulp Bij Zelfdoding [Termination of Life on Request and Assisted Suicide Act], 2001) and the Australian state of Victoria (Voluntary Assisted Dying Act, 2019), while assisted suicide is legal in some European countries such as Germany (Erlaubnis Zum Erwerb Einer Tödlichen Dosis Natrium-Pentobarbital Zur Selbsttötung [Permission to Acquire a Lethal Dose of Sodium Pentobarbital for Suicide], 2017) and Switzerland (Homicide/Meurtre Sur La Demande de La Victime [Homicide/Death Under the Victim's Demand], 1937), as well as in some states in the USA (California (End of Life Option Act, 2015), Colorado (Colorado End-of-Life Options Act, 2016), Hawaii (Our Care, Our Choice Act, 2018), Maine (An Act to Enact the Maine Death with Dignity Act, 2019), Montana (Baxter v. Montana, 2009), New Jersey (Aid in Dying for the Terminally Ill Act, 2018), Oregon (Oregon Death with Dignity Act, 2019), Vermont (Patient Choice at End of Life, 2013), Washington (The Washington Death With Dignity Act, 2008), and the District of Columbia (Death With Dignity Act, 2016)). In other developed countries, a heated debate is taking place (Hendry et al., 2013) and the dominant opinion is that of approval (Addington-Hall & Seale, 1994; Caddell & Newton, 1995; Cohen et al., 2006; O'Neill, Feenan, Hughes, & McAlister, 2003; Seale & Addington-Hall, 1995a, 1995b; Wise, 1996). This is the case with Portugal (Arreigoso, 2016), where, while euthanasia is not yet legal, a euthanasia bill has very recently been approved (Assembleia da República, 2020).

The predictors for approval of hastened death have been studied previously. One's position in such matters is essentially a complex end-product of his/her morals, beliefs, political and religious values, and environment. Beliefs provide a solid (but not necessarily factual) representation of the world and are fundamental to guiding us

through our everyday life, explaining what is around us and what to expect from it, and guiding our behaviour (Bautista et al., 2018). Hence, belief systems provide us with meaning and answers to existential questions. These beliefs can be of different types, whether secular, political, spiritual, or religious, among others, and have an important social component, especially religious and political ones, which renders them more resistant to change. Yet, being based on a probabilistic judgement of the world around us, they constitute a biased product of our own assessment (Seitz, Paloutzian, & Angel, 2018). It is very important to note, additionally, that personal expectations such as these bear highly subjective emotional components which may make them especially vulnerable to one's social environment (Seitz et al., 2018) – beliefs can be modulated by either new or repeated information (Kaplan, Gimbel, & Harris, 2016). It has been shown that public opinion on matters such as that of euthanasia can quickly change with mediatic cases (Cohen et al., 2006; Mullet et al., 2014). Beliefs that are created at a young age and which rest on narratives beyond the limits of personal experience (such as spiritual beliefs) may become fundamental beliefs that are almost immutable with time, experience, and even contradictions (Bautista et al., 2018), remaining very common among adults (Bering, Blasi, & Bjorklund, 2005; Giménez & Harris, 2005). Therefore, religions play a fundamental role. Religious affiliation and especially high religiosity not only have been consistently associated with lesser approval (Hamil-Luker & Smith, 1998; Ward, 1980) but are one of the key predictors of attitudes towards euthanasia (Aghababaei, 2013; Danyliv & O'Neill, 2015; Bulmer et al., 2017; Marsala, 2019; Silva, Azevedo, & Ricou, 2019). Hence, as we have been witnessing a secularization of modern societies, it makes sense that agreeability with euthanasia has been increasing over time (Danyliv & O'Neill, 2015; DeCesare, 2000; Montero, 2011). The most important contributor to this social change seems to be the effect of cohort replacement rather than individuals changing as they age, though approval of euthanasia does decline as people get older (Marsala, 2019). Older people are more religious, as well (Argue, Johnson, & White, 1999; Bautista et al., 2018).

As it is typical of religions to be able to provide answers to the haunting everlasting mystery of the after-death (Vail et al., 2010), promising their followers a pleasing afterlife and deeming life in the physical world as some sort of transition (Bautista et al., 2018), we would perhaps infer that religious people would be more accepting of death and, therefore, more sympathetic towards hastened death than if they held not-as-pleasant beliefs about what happens next. As a matter of fact, the opposite is true. This is because religions teach that life is sacred and only divine entities can interfere with its limits; thus, most of them condemn killing, and, by extension, the act of hastened death as well (Baume, O'Malley, & Bauman, 1995). The Vatican Declaration on Euthanasia reads, "It is necessary to state firmly once more that nothing and no one can in any way permit the killing of an innocent human being, whether a fetus or an embryo, an infant or an adult, an old person, or one suffering from an incurable disease, or a person who is dying. Furthermore, no one is permitted to ask for this act of killing, either for himself or herself or for another person entrusted to his or her care, nor can he or she consent to it, either explicitly or implicitly, nor can any authority legitimately recommend or permit such an action. For it is a question of the violation of the divine law, an offense against the dignity of the human person, a crime against life, and an attack on humanity" (Sacred Congregation for the Doctrine of the Faith, 1980). Islamism (Gielen, Van den Branden, & Broeckaert, 2009a) and Judaism (Mackler, 2003) share similar stances. Because the faithful base rightness and wrongness in God's commands, they tend to object to euthanasia and PAS (Parker, 2016). The only form of hastened death they might somewhat accept is that of the withdrawal of curative treatment in a dying patient; in Evangelium Vitae, Pope John Paul II affirms that futile treatments do not have to be initiated or continued in order to respect the sanctity of life and that decision does not constitute euthanasia, but, rather, "an acceptance of the human condition in the face of death" (Rizzo, 1996). Yet, it is important to note that some religious people may be sympathetic towards euthanasia even if they are aware of the apparent contradiction between its practice and their

beliefs (Gielen, van den Branden, & Broeckaert, 2009b). Previous studies suggest that, among common religions, Anglicans (Kitchener, 1998; Kuhse & Singer, 1993) and Jews (Davis et al., 1993; Musgrave & Soudry, 2000; Portenoy et al., 1997; Young, Volker, Rieger, & Thorpe, 1993) may be more inclined than others, such as other Protestants and Catholics, to support changes in the law regarding voluntary euthanasia or other forms of hastened death (Chakraborty et al., 2017). In fact, Catholics seem to be the least open of all common religions (Anderson & Caddell, 1993; Asch & DeKay, 1997; Berghs, Dierckx de Casterlé, & Gastmans, 2005; Kitchener, 1998; Kuhse & Singer, 1993; Musgrave & Soudry, 2000; Portenoy et al., 1997). The recent increasing interest in Eastern religions and philosophy in the West is also noteworthy (Mitchell, 2002), though the first of the 10 Buddhist precepts commands refraining from destroying life as well (Lecso, 1986). One particular Eastern concept that has become rather popular in Western culture, in people who identify as either religious or non-religious, is that of Karma (Lecso, 1986). Karma arises as yet another magical belief and, as such, serves the purpose of sense-making and psychological control (White & Norenzayan, 2019). It teaches that positive actions bring pleasant rewards to one's life while negative actions bring suffering. Therefore, the suffering that may be experienced at end-of-life stages is repayment of a karmic debt, as Lecso (1986) puts it, and so it is to be considered fair – the patient must be held accountable for it. Thus, euthanasia would externally disrupt karma's action and so cannot be permitted. Besides, the use of narcotics as a method of euthanasia renders the patient numb and unconscious, while Buddhism preaches that the dying process is to be experienced with consciousness and mindfulness. However, Buddhism does advise palliative care and relief of pain for the terminally ill (Lecso, 1986), in line with the standpoint of Western religions.

This highlights the importance of magical thinking to the human being, of constructing beliefs about the world, even if they consciously challenge analytical thinking. For instance, studies have consistently shown that while being aware of the

biological concept of death, people – even non-religious – still hold beliefs according to which some cognitive and emotional functions may continue to exist in the afterlife (Bering, 2002a; Georgiadou & Pnevmatikos, 2019). This demonstrates the role of such constructs in buffering death anxiety. Indeed, results from previous studies have suggested that, for theists and atheists alike, the need for meaning in general and also threats to existence (such as natural disasters (Sibley & Bulbulia, 2012)) increase adherence to magical beliefs, such as mind-body dualism and superstitions (Nelson et al., 2019). Therefore, these magical beliefs can be religious (Norenzayan & Hansen, 2006) when properly associated with organized religions, either contained within their teachings or in any way practiced by their followers, though not all magical beliefs are religious. As mentioned, non-religious people oftentimes hold some type of spiritual beliefs (Georgiadou & Pnevmatikos, 2019). The mind-body dualism and the existence of some supernatural entities (such as ghosts) or forces (such as Karma), for instance, do not presuppose the existence of a god or the practice of religious activities. It is possible to have a deep sense of spirituality and no formal engagement in religious activities. Many sports players perform very specific sequences of actions before taking to the field; some of these actions are religious, but some of them are not (Maranise, 2013; Schippers & Van Lange, 2006). They believe that these repeated rituals could increase their odds of success, which might be through conditioning, for the illusion of control (Schippers & Van Lange, 2006), as an escape mechanism from anxiety (Maranise, 2013), or others. All in all, they are relying on superstitions, being faithful to a magical belief according to which, through some magical but not necessarily religious way, these rituals could influence the outcome of the match. As a more universal example, when we see objects associated with ones we love or trust in a higher regard, and then keep our distance from those objects associated with something we regard negatively, we are already seeing the world through a magical lens (Stavrova & Meckel, 2017). This future-telling ability is advantageous for our own survival, pushing us to opt for what is perceived as better for us (Stavrova & Meckel, 2017). As such, not

only is magical thinking strongly embedded in our culture, but it is also something we instinctively engage in and that is perhaps inherent in our very condition of self-conscious but limited beings, subject to a constant search for meaning, to anxiety, and to pressures to win and survive. Spiritual beliefs encompass a branch of those magical thoughts and have been shown to account for meaningful effects in the development and maintenance of other, more tangible, belief systems, ultimately shaping one's behaviour. For instance, belief in mind-body dualism has been found to attenuate health behaviour (Forstmann & Burgmer, 2018). In fact, it has been theorized that dualist thinking is intuitive in human beings, as we engage, from early on, in making inferences about others' unobservable-mental world in order to predict and understand their observable behaviours (Forstmann & Burgmer, 2018). Therefore, it could be that all we do through scientific knowledge and cultural factors is overlay this implicit theism with more scientific constructs. Furthermore, the mind-body dilemma has been thought to be an important basis of other metaphysical mental constructs, such as life after death and the existence of souls, as these presuppose that mental states can exist without a physical body. In this study, the phrase "spiritual beliefs" will refer to all kinds of magical thinking held by people, from superstitions and non-religious spiritual beliefs to proper religious beliefs.

In 2018, the Portuguese Parliament voted on four bills[ii] intending to deem informed, lucid, and conscious adults suffering from lasting and unbearable physical or psychological pain able to ask for medically-hastened death. All bills were rejected, but that did not stop them from sparking a much-heated debate in Portuguese society. As of 2016, 67.4% of a sample of Portuguese citizens were in favour, while 22.1% were against and 10.5% did not answer. These figures gain special relevance when compared to those from a 2008 study by the same company, which showed 50.1% favourable opinions and 39.3% against (Arreigoso, 2016).

Two years later, in February 2020, the Portuguese Parliament voted on five bills[iii] identical to those of 2018. This time around, all five bills were accepted.

Considering the role of religion and the trend of increasing secularization, it seems natural that, in the coming years, more legal challenges may arise in other developed countries as well. However, if anything is clear, it is that further research should not be ruled out before other bills are voted on. A study by Silva et al. (2019) presented a sample of Portuguese physicians with six very distinct euthanasia situations. It was shown that their opinions differed greatly from case to case, depending on the patient's condition, awareness and life-expectancy with presumedly good quality of life. These results were consistent with previous findings (Mullet et al., 2014).

To further understand what defines peoples' standpoints towards such a complex topic, we sought to look into their beliefs about life and death and how these could be at the core of the various standpoints. Simply asking people what religion they most identify with could be limiting given that it may not fully represent the people's core beliefs (especially in today's increasingly secular societies). There are different levels of religiosity, and people – especially those in developed countries – are increasingly questioning their religions' classic values (Dobbelaere & Voyé, 2000; Gielen et al., 2009a; Halman & Draulans, 2004). On the other hand, as previously mentioned, spiritual beliefs are common among the non-religious as well (Georgiadou & Pnevmatikos, 2019). Previous studies have noted that the operationalisation of religion should include questions about specific beliefs and measures of religiosity (Gielen et al., 2009a), especially considering that religiosity is based on acts of faith, obedience to divine laws, sacred objects and places, and supernatural events and entities (Bautista et al., 2018). Moreover, simply identifying the religion does not enable us to determine whether the religious person defines his/her position as a secondary product of whatever his/her religion is or whether, instead, it is the case that his/her fundamental beliefs are in harmony with those of his/her religion. Some suggest that some spiritual beliefs, such as afterlife beliefs, could be religious-independent constructs that feed deeper psychological needs (Georgiadou & Pnevmatikos, 2019). This would signify that religions are but one means of serving those deep needs and

that, thus, we should look beyond them, as there could be other non-religious constructs that serve the same purpose. Therefore, we opted to ask participants not only about their religious affiliations but also about their levels of religiosity and their agreement towards a set of independent sentences regarding common spiritual and metaphysical beliefs (Bautista et al., 2018; Georgiadou & Pnevmatikos, 2019). To do so, we adapted the beliefs used in this study from pre-existing scales (Delaney, 2005; Echebarría & Perez, 2017; Hills, Francis, & Robbins, 2005; Hodge, 2003; Riekki, Lindeman, & Lipsanen, 2013; Tobacyk, 2004). We chose to study medical students because they represent a new generation of doctors inevitably moulded by the new social determinants surrounding them and will most likely be the decision-makers once euthanasia is fully legalized in Portugal. Nonetheless, it is very important to mention that the position of doctors has previously been found to be in contrast to that of the general public (Jaques, 2012; Suarez-Almazor, Belzile, & Bruera, 1997; Wolfe, Fairclough, Clarridge, Daniels, & Emanuel, 1999). This could be partially explained by the fact that popular culture is still largely dominated by non-scientific and magical beliefs and that the general public knows and understands little about scientific advances (Bautista et al., 2018).

Previous studies conducted among nurses (Musgrave & Soudry, 2000; Musgrave, Margalith, & Goldsmidt, 2001; Sørbye, Sørbye, & Sørbye, 1995), medical students (Muller et al., 1996), and doctors (Anderson & Caddell, 1993; Baume et al., 1995; Ryynänen, Myllykangas, Viren, & Heino, 2002; Silva et al., 2019) have all consistently shown a negative relationship between levels of religiosity and approval of euthanasia (Gielen et al., 2009b; Silva et al., 2019). Accordingly, we expect less approval of euthanasia from more religious participants. Like most Western European countries, Portugal has a vast majority of Catholic people, followed by people who do not identify with any religion, and then other Christians, such as Protestants and the Orthodox. In the 2011 Portuguese census, only 0.5% of respondents identified with non-Christian religions, while a crushing 81% identified as Catholic (Instituto Nacional

de Estatística [Statistics Portugal], 2012). On the other hand, 6.9% identified as non-religious, a figure that grew 79% since the 1991 census. Therefore, we expect the same trend in this study. Religious diversity has also been increasing (Observatório das Migrações, n.d.). As medical schools require high levels of scientific preparation and study, and based on previous findings that more educated people – especially in scientific areas – tend to show lower levels of religiosity (Bautista et al., 2018; Gervais & Norenzayan, 2012; Larson & Witham, 1998; Lynn, Harvey, & Nyborg, 2009; Nature Editorial, 2005; Norenzayan, Gervais, & Trzesniewski, 2012; Pennycook, Cheyne, Seli, Koehler, & Fugelsang, 2012; Pérez-Agote & García, 2005; Shenhav, Rand, & Greene, 2012; Zuckerman, Silberman, & Hall, 2013), besides the aforementioned effects of cohort replacement and age in religiosity, we expect participants in this study to be less religious than the general population. This effect is to be expected in both religious affiliation and religiosity, and should have an impact on the outcome, as Silva et al. (2019) found in their study among Portuguese doctors. Younger doctors were more supportive of euthanasia in a statistically significant manner: 66.2% in the 25- to 45-year-old group versus 47.8% in the 46- to 65-year-old group. Other studies have found that education is independently linked to approval of euthanasia (Bulmer et al., 2017). However, some studies have shown a stronger positive link between moral concern, social and emotional cognition and spiritual beliefs than the negative one seen with analytical thinking (Banerjee & Bloom, 2013; Barrett, 2000, 2004; Bering, 2002b, 2012; Bloom, 2007; Boyer, 2001; Dennett & Lane, 2006; Friese & Wänke, 2014; Gervais, 2013; Jack et al., 2016; Liu, 2010; Norenzayan et al., 2012; Paek, 2006; Rounding, Lee, Jacobson, & Ji, 2012; Saroglou, Pichon, Trompette, Verschueren, & Dernelle, 2005), which could be relevant among medical students, as medicine implies the care of the ill and a sense of social responsibility. The tendency of more intelligent and educated people to be less religious does not necessarily mean that their beliefs about existential and metaphysical questions are closer to the truth. It could simply be the case that they are armed with other constructs by which to explain these same

questions – namely, constructs more rooted in scientific, rational, and empirical bases than supernatural or magical ones. Nonetheless, it is worth remembering that the ungraspable nature of these subjects still ultimately lies beyond all our scientific truths.

This study aims to understand the link between common religious and spiritual beliefs about life and death and agreeability towards euthanasia in medical students.

Methods

Participants

Four hundred and ninety-seven medical students from all 10 Portuguese Medicine Universities (Departamento de Ciências Biomédicas e Medicina – Universidade do Algarve [Department of Biomedical Sciences and Medicine of the University of Algarve], Escola de Medicina – Universidade do Minho [School of Medicine of the University of Minho], Faculdade de Ciências da Saúde – Universidade da Beira Interior [Faculty of Health Sciences of the University of Beira Interior] Faculdade de Ciências da Vida – Universidade da Madeira [Faculty of Life Sciences of the University of Madeira], Faculdade de Ciências e Tecnologia – Universidade dos Açores [Faculty of Science and Technology of the University of the Azores], Faculdade de Medicina da Universidade de Coimbra [Faculty of Medicine of the University of Coimbra], Faculdade de Medicina da Universidade do Porto [Faculty of Medicine of the University of Porto], Faculdade de Medicina de Lisboa [Faculty of Medicine of the University of Lisbon], Instituto de Ciências Biomédicas Abel Salazar [Abel Salazar Institute of Biomedical Sciences] and NOVA Medical School – Faculdade de Ciências Médicas [Faculty of Medical Sciences of the NOVA University of Lisbon]) voluntarily participated in this study. Students from all six years of studies participated proportionately with a mild majority of sixth grade respondents (23.5%). Ages ranged from 18 to 54 years old ($M = 22.3$, $SD = 4.2$) and 71% of respondents were women. No particular inclusion or exclusion criteria were used to further select participants, thus, all 497 responses were included in the analysis.

Instruments

A questionnaire composed by four main sections was created for this purpose. First, informed consent was presented, including the pertinence and aim of the study. Explanations related to the protection, privacy, and confidentiality were provided, as

stated by EU General Data Protection Regulation (GDPR, 2016) In the second section, demographic data of participants were collected, including religious orientation and measures of religiosity. In the third section, in order to analyse students' positions about relevant spiritual beliefs, 11 sentences were created taking the literature in this field into account. These beliefs were adapted from pre-existing scales (Delaney, 2005; Echebarría & Perez, 2017; Hills et al., 2005; Hodge, 2003; Riekki et al., 2013; Tobacyk, 2004) and explored matters such as the mind-body dualism, afterlife beliefs, belief in paranormal events, superstitious beliefs and the role of these beliefs in participants' lives. One particular statement (number five) had a distinct intent to explore some degree of conflict between what one believes is real and what he/she wishes was real. This confusion within could be influential in one's standpoint towards such life-and-death issues. These sentences were created and applied in Portuguese and posteriorly translated for publication purposes. In order to collect information and obtain agreement among a group of experts regarding the suitability of these sentences, the e-Delphi panel technique was used (Logue & Effken, 2013; Streiner & Norman, 2008). All sentences were analysed concerning their theoretical and practical adequacy. The 11 sentences were sent by email to the e-Delphi panel, composed of five experts, including researchers and health professionals. The analysis was performed through a dichotomous classification (agree or disagree), with space for comments or suggestions on each item. Changes to the questionnaire were made based on the suggestions and comments made by the panel. Multiple phases were conducted to reach a consensus among the panel of at least 80% (Logue & Effken, 2013; Streiner & Norman, 2008). Participants were asked to manifest their agreeability with these statements on a scale of one to six. Finally, in the fourth section, participants were presented with six euthanasia situations that were previously used by Silva et al (2019). This section intended to explore their agreeability with euthanasia regarding each different situation. These euthanasia scenarios were applied in Portuguese and posteriorly translated for publication purposes.

Procedures

To reach a representative sample, students from all Portuguese Medicine Universities were included. To collect the data, we asked the Students' Association of each medical school for collaboration. They introduced the study to the students of their respective universities and invited them to participate. The questionnaire was made available to participants via a link shared through direct e-mail. The questions were answered on-line through the Google Forms platform. This procedure was used to increase participation, since a national dissemination of the questionnaire was intended. Data collection took place from January to February 2020. Only this study's authors had access to the data.

Ethical procedures were accomplished via analysis and approval of the study by an independent Ethical Committee (Comissão de Ética para a Saúde – Centro Hospitalar de São João [Ethics Committee of São João Hospital Center]). All students participated in the study anonymously. No reward was made available for participating in the study.

Data analysis

Statistical analysis was performed using Statistical Package for the Social Sciences (IBM SPSS, version 26.0). Agreeability with euthanasia scenarios and spiritual beliefs, initially collected on six-point bipolar scales, were recoded into binary variables. Values from one to three represented disagreement and values from four to six represented agreement. In the generality of beliefs presented, agreement implies higher spirituality, while disagreement implies lesser spirituality. However, the rationale behind beliefs number four and five is the opposite. Higher agreeability with these particular statements suggests lesser spirituality, and not higher. For these beliefs, disagreement (values one to three) represented higher spirituality, while agreement (values four to six) corresponded to less. Categorical variables were presented in frequency and percentage.

The Mann-Whitney test was performed to analyse differences in agreeability with euthanasia between male and female participants and between Catholics and atheists/agnostics. The Pearson's Chi-Square Test was used to test the independence between categorical variables and compare proportions between categories of variables.

A multiple regression analysis (stepwise forward method) was employed to evaluate the spiritual belief variables which represented independent and significant predictors of agreeability with euthanasia scenarios. Statistical assumptions were verified through the Durbin-Watson test, collinearity diagnostics and standardized residual plots.

Statistical significance was set at $p\text{-value} < 0.05$.

Results

Religious affiliation and religiosity

Regarding religious affiliation, 53.5% of participants identified as Catholic while 41.9% identified as atheists or agnostics. The remaining 4.6% identified with other religious ideologies.

As far as measures of religiosity go, 31.8% identified as religiously active, while 24.7% admitted to not being active in the practice of their religions. In terms of how regularly they attend a place of religious or spiritual cult, 22.3% answered with “never”, 34.4% with “1-3 times a year”, 12.9% with “more than 3 times a year but less than 1 time per month”, 6.0% with “1-3 times per month” and 12.3% with “at least once a week”.

Agreeability with spiritual beliefs

1. A mente é uma forma de energia independente do corpo, estando-lhe apenas temporariamente confinada [The mind is a form of energy independent from the body, being only temporarily confined to it].

A total of 20.8% of participants agreed with this belief, while 79.2% disagreed.

2. A alma existe [The soul exists].

A total of 56.9% of participants agreed with this belief, while 43.1% disagreed.

3. Acredito que possam existir outras dimensões depois da morte, como a reencarnação ou outra [I believe there could be other dimensions after death, such as reincarnation or other].

A total of 44.7% of participants agreed with this belief, while 55.3% disagreed.

4. Somos apenas carne e osso e toda a nossa vivência cessa com a morte [We are but flesh and bones and all of our life experience ends with death].

A total of 43.7% of participants agreed with this belief, while 56.3% disagreed.

5. Eu gostaria que houvesse um propósito para a minha existência, mas tudo me faz crer que ela termina definitivamente com a morte [I would like for my existence to have a purpose, but everything leads me to believe that it completely ends with death].

A total of 49.1% of participants agreed with this statement, while 50.9% disagreed.

6. Acredito que existe uma força universal transcendente que não posso ver diretamente, mas cuja energia posso sentir [I believe there is a transcendent universal force, which I cannot see directly, but the energy of which I can feel].

A total of 54.9% of participants agreed with this belief, while 45.1% disagreed.

7. Existem certas ações ou símbolos que acarretam Sorte ou Azar [There are certain actions or symbols that convey good or bad luck].

A total of 21.9% of participants agreed with this belief, while 78.1% disagreed.

8. As minhas crenças espirituais, religiosas ou metafísicas ajudam-me a lidar com os desafios e decisões importantes da vida [My spiritual, religious or metaphysical beliefs help me cope with the important challenges and decisions of my life].

A total of 53.1% of participants agreed with this statement, while 46.9% disagreed.

9. Acredito já ter testemunhado uma manifestação da presença de Deus ou outra entidade divina na minha vida [I believe to have witnessed a manifestation of the presence of God or other divine entity in my life before].

A total of 30.6% of participants agreed with this belief, while 69.4% disagreed.

10. Acredito na existência de fenómenos paranormais [I believe in the existence of paranormal phenomena].

A total of 28.2% of participants agreed with this belief, while 71.8% disagreed.

11. É possível comunicar com os mortos [It is possible to communicate with the dead].

A total of 10.7% of participants agreed with this belief, while 89.3% disagreed.

Agreeability with euthanasia scenarios

a. Adulto com doença incurável e dor intensa (8-10, numa escala de 0 a 10, em que 10 é a dor máxima, insuportável) pede para terminar a sua vida [Adult with an incurable disease and intense pain (eight out of ten, with ten being unbearable extreme pain) asks for his life to be ended].

A total of 71.0% of participants agreed with euthanasia in this scenario, while 29.0% opposed.

b. Adulto com doença incurável, muito incapacitante (problema grave ou completo na Classificação Internacional de Funcionalidade, Incapacidade e Saúde, da Organização Mundial de Saúde), pede para terminar a sua vida. [Adult with a very incapacitant (serious or complete problem in the World Health Organization's International Classification of Functioning, Disability and Health) and incurable disease asks for his life to be ended].

A total of 74.6% of participants agreed with euthanasia in this scenario, while 25.4% opposed.

c. Adulto com doença terminal referencia um sofrimento insuportável e pede para terminar sua vida [Adult with terminal disease who mentions that he is experiencing unbearable suffering asks for his life to be ended].

A total of 77.9% of participants agreed with euthanasia in this scenario, while 22.1% opposed.

d. Adulto com doença terminal, em evolução, ainda com boa qualidade de vida, pede para terminar sua vida [Adult with a terminal disease in evolution, though with a good quality of life currently, asks for his life to be ended].

A total of 31.4% of participants agreed with euthanasia in this scenario, while 68.6% opposed.

e. Adulto com doença incurável e incapacidade permanente de manifestar sua vontade. Os familiares pedem ao médico para terminar a sua vida, afirmando que essa seria a sua vontade [Adult with an incurable disease and permanent incapacity to express his will. His family members ask the physician for his life to be ended, stating that that would be his will.]

A total of 35.8% of participants agreed with euthanasia in this scenario, while 64.2% opposed.

f. Criança de três anos com doença incurável e dores crônicas difíceis de suportar. Os pais pedem ao médico para terminar sua vida [Three-year-old child with an incurable disease and hard-to-bear chronic pain. His/her parents ask the physician to end the child's life].

A total of 40.4% of participants agreed with euthanasia in this scenario, while 59.6% opposed.

Differences in spirituality and agreeability with euthanasia between groups

The Mann-Whitney test was performed to determine whether agreeability with euthanasia was different between genders and among different religious ideologies. Statistically significant differences between male and female respondents were found

in spirituality, as measured by the spiritual beliefs presented, and in agreeability with euthanasia, as measured by the scenarios presented (Table 1). Women showed higher levels of spirituality *(U* = 21240.5, $p < 0.05$), and higher agreeability with euthanasia (*U* = 20167.0, $p < 0.05$). As far as religiosity is concerned, irreligious (atheists and agnostic) participants showed higher levels of agreeability with euthanasia than Catholic respondents (*U* = 19082.0, $p < 0.05$). Participants who said to be religiously active showed lesser levels of agreeability with euthanasia (*U* = 6336.5, $p < 0.05$).

Table 1

Differences between groups: Mann-Whitney test

Groups	N	Mean Rank	Mann-Whitney	*p*
Male	144	220.00	21240.5	0.04
Female	353	260.83		
Catholic	266	205.24	19082.0	0.00
Atheists and agnostic	208	278.76		
Religiously active	158	119.60	6336.5	0.00
No religiously active	123	168.48		

Differences in spiritual beliefs between genders

To determine whether agreeability with spiritual beliefs was different between genders, the Mann-Whitney test was performed. Statistically significant differences between male and female respondents were found in spiritual beliefs one (*U* = 22352.0, $p < 0.05$), two (*U* = 20944.0, $p < 0.05$), four (*U* = 22899.5, $p < 0.05$) and six (*U* = 22161.0, $p < 0.05$) (Table 2).

Table 2

Differences between genders: Mann-Whitney test

Spiritual beliefs	Group	N	Mean Rank	Mann-Whitney	*p*
Spiritual belief 1	Male	144	227.72	22352.0	0.00

	Female	353	257.67		
Spiritual belief 2	Male	144	217.94	20944.0	0.00
	Female	353	261.67		
Spiritual belief 3	Male	144	238.09	6336.5	0.20
	Female	353	253.45		
Spiritual belief 4	Male	144	266.48	22899.5	0.04
	Female	353	241.87		
Spiritual belief 5	Male	144	259.88	23849.5	0.21
	Female	353	244.56		
Spiritual belief 6	Male	144	226.40	22161.0	0.00
	Female	353	258.22		
Spiritual belief 7	Male	144	235.92	23532.0	0.07
	Female	353	254.34		
Spiritual belief 8	Male	144	244.70	24797.0	0.62
	Female	353	250.75		
Spiritual belief 9	Male	144	242.03	24412.0	0.38
	Female	353	251.84		
Spiritual belief 10	Male	144	237.67	23785.0	0.14
	Female	353	253.62		
Spiritual belief 11	Male	144	241.48	24333.5	0.16
	Female	353	252.07		

Association between spiritual beliefs and euthanasia scenarios

The Chi-Square Test of Independence was performed to evaluate the association between each spiritual belief and agreeability with each euthanasia case. The Phi coefficient (-1 to 1) was applied to analyse the strength of relation. Statistically significant association was found between every euthanasia scenario and multiple of the spiritual beliefs.

Euthanasia scenario a)

Spiritual beliefs number two ($X^2_{(1)} = 19.31$, $p = 0.00$, $p < 0.05$), three ($X^2_{(1)} = 9.72$, $p = 0.00$, $p < 0.05$), four ($X^2_{(1)} = 14.16$, $p = 0.00$, $p < 0.05$), five ($X^2_{(1)} = 20.15$, $p = 0.00$, $p < 0.05$), six ($X^2_{(1)} = 8.77$, $p = 0.00$, $p < 0.05$), eight ($X^2_{(1)} = 27.59$, $p = 0.00$, $p < 0.05$) and nine ($X^2_{(1)} = 38.62$, $p = 0.00$, $p < 0.05$) were associated, in a statistically significant matter, with increased agreeability with the practice of euthanasia in this scenario.

Euthanasia scenario b)

Spiritual beliefs number two ($X^2_{(1)} = 23.45$, $p = 0.00$, $p < 0.05$), three ($X^2_{(1)} = 13.51$, $p = 0.00$, $p < 0.05$), four ($X^2_{(1)} = 22.89$, $p = 0.00$, $p < 0.05$), five ($X^2_{(1)} = 20.33$, $p = 0.00$, $p < 0.05$), six ($X^2_{(1)} = 12.11$, $p = 0.00$, $p < 0.05$), eight ($X^2_{(1)} = 24.74$, $p = 0.00$, $p < 0.05$), nine ($X^2_{(1)} = 52.78$, $p = 0.00$, $p < 0.05$), ten ($X^2_{(1)} = 16.11$, $p = 0.00$, $p < 0.05$) and eleven ($X^2_{(1)} = 8.18$, $p = 0.00$, $p < 0.05$) were associated, in a statistically significant matter, with increased agreeability with the practice of euthanasia in this scenario.

Euthanasia scenario c)

Spiritual beliefs number two ($X^2_{(1)} = 25.99$, $p = 0.00$, $p < 0.05$), three ($X^2_{(1)} = 22.58$, $p = 0.00$, $p < 0.05$), four ($X^2_{(1)} = 27.40$, $p = 0.00$, $p < 0.05$), five ($X^2_{(1)} = 36.64$, $p = 0.00$, $p < 0.05$), six ($X^2_{(1)} = 16.28$, $p = 0.00$, $p < 0.05$), eight ($X^2_{(1)} = 30.65$, $p = 0.00$, $p < 0.05$), nine ($X^2_{(1)} = 61.19$, $p = 0.00$, $p < 0.05$), ten ($X^2_{(1)} = 9.77$, $p = 0.00$, $p < 0.05$) and eleven ($X^2_{(1)} = 4.82$, $p = 0.03$, $p < 0.05$) were associated, in a statistically significant matter, with increased agreeability with the practice of euthanasia in this scenario.

Euthanasia scenario d)

Spiritual beliefs number two ($X^2_{(1)} = 12.11$, $p = 0.00$, $p < 0.05$), three ($X^2_{(1)} = 6.08$, $p = 0.01$, $p < 0.05$), four ($X^2_{(1)} = 12.15$, $p = 0.00$, $p < 0.05$), five ($X^2_{(1)} = 22.28$, $p = 0.00$, $p < 0.05$), six ($X^2_{(1)} = 8.14$, $p = 0.00$, $p < 0.05$), eight ($X^2_{(1)} = 29.13$, $p = 0.00$, $p < 0.05$) and nine ($X^2_{(1)} = 20.74$, $p = 0.00$, $p < 0.05$ were associated, in a statistically significant matter, with increased agreeability with the practice of euthanasia in this scenario.

Euthanasia scenario e)

Spiritual beliefs number five ($X^2_{(1)} = 9.66$, $p = 0.00$, $p < 0.05$), seven ($X^2_{(1)} = 5.07$, $p = 0.02$, $p < 0.05$), eight ($X^2_{(1)} = 8.50$, $p = 0.00$, $p < 0.05$), nine ($X^2_{(1)} = 11.14$, $p = 0.00$, $p < 0.05$) and eleven ($X^2_{(1)} = 4.53$, $p = 0.03$, $p < 0.05$) were associated, in a statistically significant matter, with increased agreeability with the practice of euthanasia in this scenario.

Euthanasia scenario f)

Spiritual beliefs number five ($X^2_{(1)}$ = 6.85, p = 0.01, p < 0.05), eight ($X^2_{(1)}$ = 11.82, p = 0.00, p < 0.05) and nine ($X^2_{(1)}$ = 10.68, p = 0.00, p < 0.05) were associated, in a statistically significant matter, with increased agreeability with the practice of euthanasia in this scenario.

Spiritual beliefs number five, eight and nine were found to be the most associated with increased agreeability with euthanasia, as measured through the scenarios presented. Increased agreeability with these beliefs was associated with increased agreeability with the practice of euthanasia in every scenario presented in a statistically significant manner. Spiritual beliefs number two, three, four and six followed, showing significant association with four of the six euthanasia scenarios presented. Spiritual belief number 11 showed significant association with three of the six euthanasia scenarios. Spiritual belief number ten showed significant association with two of the six euthanasia scenarios. Spiritual belief number seven showed significant association with one of the six euthanasia scenarios. Only spiritual belief number one did not show significant association with any of the euthanasia scenarios presented.

Predictors of agreeability with the euthanasia scenarios

Through multiple regression analysis, it was found that the variability of the dependent variable was explained by a set of independent variables, as shown in Table 3. We found five variables statistically significant to the model [F(5.491) = 19.49, p < 0.001; R^2 = 0.166]. Spiritual beliefs number one (B = -0.123; t = 2.84, p < 0.05), number five (B = -0.141; t = 2.85, p < 0.05), number seven (B = -0.100; t = 2.38, p < 0.05), number eight (B = -0.137; t = -2.76, p < 0.05) and number nine (B = -2.40; t = -4.88, p < 0.05) constituted predictors of agreeability with euthanasia in the situations presented.

Table 3

Spiritual beliefs which were predictors of agreeability with the euthanasia situations

		Total agreeability with euthanasia	
Variable	Model B	*B*	*p*
Constant	9.38		0.000
Belief_9	-102	-0.24	0.000
Belief_8	-0.53	-0.13	0.006
Belief_1	0.52	0.12	0.005
Belief_5	0.55	0.14	0.005
Belief_7	0.47	0.10	0.01
R^2	.166		
F	19.49		0.000

Discussion

This sample of Portuguese medical students followed the trend of religious affiliation seen in the Portuguese general population, with Catholicism being the dominant ideology, followed by irreligiosity. A total of 53.5% identified as Catholic, while 41.9% identified as atheists or agnostics. The remaining 4.6% identified with other religious ideologies. Although in alignment with the trend seen in the general population, these figures are drastically more inclined towards irreligiosity than those of the latter. In the 2011 Portuguese Census, 81% of the population identified as Catholic and 6.9% as irreligious (Instituto Nacional de Estatística [IP], 2012). Although we could expect the irreligious figure to have grown since 2011, following the 79% increase it saw from 2001 to 2011 (Observatório das Migrações, n.d.), it should still lie rather far from the 41.9% seen in these medical students. Therefore, this sample is considerably more irreligious than the general population, as expected. Participants in this study largely belonged to a young generation (M = 22.3 years old, SD = 4.2), and, as medical students, were more scientifically educated than the general population (Bautista et al., 2018). These factors can account for the lower religious affiliation seen in this sample (Bautista et al., 2018; Marsala, 2019).

Respondents mostly disagreed with the spiritual beliefs presented – only three of them gathered over 50% of agreeability. Yet, it should be noted that the rationale behind statement numbers four and five is the opposite, as agreeability presupposes a lesser sense of purpose in life. Therefore, the disagreeing figures (l56.3% for statement number four and 50.9% for statement number five) are the more spiritual ones. Thus, participants showed higher spirituality in five out of the 11 spiritual beliefs presented. This result further suggests that these university students manifest a tendentially secularized and scientific world view, contrasting with the country's traditionally highly religious background (Instituto Nacional de Estatística I.P. [Statistics Portugal], 2012).

As expected, and as consistently reported in previous studies (e.g., Hamil-Luker & Smith, 1998; Muller et al., 1996), agreeability with euthanasia was different among students who had a formal religious affiliation as compared to atheist or agnostic students ($U = 19082.0$, $p < 0.05$), with lesser agreeability in the Catholic group. Favourability towards euthanasia also seemed to vary with levels of religiosity. Religiously active students showed lesser levels of agreeability with euthanasia ($U = 6336.5$, $p < 0.05$). These results are consistent with the principles of most formal religions, which stand against the practice of euthanasia (Chakraborty et al., 2017). However, only Catholicism reached a sizeable number in this sample. Each of the other religions gathered no more than four answers. Thus, it was not possible to test how agreeability with euthanasia, as measured through the presented cases, would vary with other particular religions or how these would compare to that seen with Catholicism. Once again, in this study religion stands as a factor of the utmost importance in defining one's position towards euthanasia.

Identical to the Portuguese general population and the trend seen in the societies of other developed countries (Arreigoso, 2016; Cohen et al., 2006), this sample of medical students proved to be mostly favourable towards euthanasia. However, this agreeability was largely modified by the particularities of each situation. Three of the presented scenarios (a., b. and c.) gathered over 70% favourable answers, while the remaining three (d., e. and f.) did not amount to over 40% of agreeability. These three less consensual scenarios (d., e. and f.) represented situations in which the patient either still had a good quality of life (d.) or was not the one asking for his death to be hastened (e. and f.). In one of the latter (f.), the patient was a child, unlike in every other situation, which may additionally have an impact in agreeability with this situation. Moreover, it is important to note that, out of these three less consensual scenarios (d., e. and f.), only one (d.) fitted the conditions proposed by the recently approved bills in Portugal for the practice of euthanasia. Therefore, when taking into consideration only the four situations deemed eligible for the act of

euthanasia according to these bills (a., b., c. and d.), a total of three of them (a., b. and c.) gathered over 70% approval among participants. These findings suggest that, when patients suffer from terminal conditions that do not yet greatly impair their quality of life or are not autonomous enough to express their own wish to die, euthanasia is not easily accepted by these medical students. This variability has been seen before (Silva et al., 2019) and reinforces the need for euthanasia laws to be carefully tuned so that they protect not only patients' rights but also society's values.

There were some notable differences between genders in this study. Women showed higher levels of spirituality in the majority of the spiritual beliefs presented, with a statistically significant difference in beliefs number one, two, and six. This result is consistent with the findings of other studies that have reported higher spirituality levels among women (Brown, Chen, Gehlert, & Piedmont, 2013; Dennis, Muller, Miller, & Banerjee, 2004). It has been hypothesized that this difference stems from not only biological sex differences but also sociocultural factors in gender roles and socialization patterns, being more marked in less gender-egalitarian backgrounds (Robinson, Hanson, Hayward, & Lorimer, 2019). Additionally, women showed higher agreeability with euthanasia ($U = 20167.0$, $p < 0.05$). Previous literature has been inconsistent regarding the existence of gender differences in euthanasia acceptance. Some studies have reported higher agreeability among women (Muller et al., 1996) and some among men (Ramírez-Rivera et al., 2006), while others have reported no gender differences (Rodríguez-Calvo, Soto, Martínez-Silva, Vázquez-Portomeñe, & Muñoz-Barús, 2019; Stronegger, Schmölzer, Rásky, & Freidl, 2011). However, considering that around two-thirds of medical students in Portugal are women (Direção-Geral de Estatísticas da Educação e Ciência, 2019), this figure may be significant and should be explored.

One of the most remarkable results of this study was how the used spiritual beliefs were significantly associated with agreeability with euthanasia as measured through the scenarios presented (as found through the Pearson Chi-Square). This finding reinforces the need to measure spirituality through multi-item tools rather than

single closed questions about religious affiliation. Spirituality represents a core dimension in defining one's motives and behaviour towards life's challenges (Forstmann & Burgmer, 2018; Steiner, Zaske, Durand, Molloy, & Arteta, 2017). It can provide meaning and answers, especially when questions are of a nature that stands beyond our analytical understanding, such as those regarding the afterlife. Therefore, it seems natural that our intrinsic spiritual constructs are deeply connected to our explicit answers to questions regarding bioethical dilemmas such as that of euthanasia. Out of all the 11 spiritual beliefs presented, only one did not have a significant correlation with any of the euthanasia situations presented, while three of them were significantly associated with all six situations.

The surprising twist is that higher spirituality as measured through some particular beliefs is, indeed, associated with higher agreeability with euthanasia and not the opposite, as seen with religion. Specifically, spiritual beliefs number one, five, seven, eight, and nine were found to be predictors of agreeability with euthanasia in these scenarios. It could, then, be hypothesized that although religion promotes disagreeability with euthanasia, independent spiritual beliefs concerning concrete metaphysical questions favour agreeability – specifically, beliefs regarding mind-body dualism, in which the mind is viewed as a form of energy (belief number one), and superstitions (belief number seven). However, these two beliefs do not formally presuppose the existence of divine religious entities, so they are not necessarily religious. In fact, they relate to pagan concepts, namely the existence of energy as a transcendent force and the existence of luck and mischance. If holding such pagan beliefs implies lesser formal religiosity, then this result is consistent with the known relationship between religiosity and euthanasia. Nonetheless, belief number eight, which does not represent a belief in itself, but, rather, states that spiritual, metaphysical, and religious beliefs help with life's challenges, also seems to favour agreeability. Assuming that both religious and non-religious participants agreed with this statement, different things can be inferred about each group. First, let us presume

that religious respondents abide by religious teachings. If their beliefs help them deal with life's challenges, and knowing that religious teachings oppose euthanasia (Chakraborty et al., 2017), we would expect them to disagree with euthanasia. However, the opposite was found – agreeability with this belief was shown to predict agreeability with euthanasia. All main world religions are typically monotheist and doctrinal. Along that line, very religious people may show a tendency towards being defensive of the exclusivity of their beliefs. Hence, they may be reluctant to identify with a statement – such as belief number eight – that explicitly assumes the existence of other types of beliefs. On the other hand, non-religious participants who agreed with this statement have no formal indication or religious teaching that directly prompts them to stand against hastened death. Therefore, it makes sense that they apply their metaphysical beliefs more freely to life's challenges. This can result in their non-religious spiritual beliefs coherently coexisting with higher agreeability towards euthanasia. Based on previous literature, and as we have stated before, belief in the afterlife or other solutions to the death problem could theoretically make hastened death acceptable, as if it were just some inevitable transition to an assured existence elsewhere. This could explain how non-religious yet spiritual individuals are favourable towards euthanasia. However, among non-religious, non-spiritual, more sceptical individuals, it might be both the devaluation of life (as a non-sacred value or through disbelief in a higher purpose) and the contrasting importance of individual autonomy that makes them more tolerant towards the practice of hastened death (Bulmer et al., 2017). Once again, although more secular, these, too, consist of beliefs regarding metaphysical questions. As a matter of fact, belief number five, which not only reflects this scepticism towards the value of life but also reflects introspection towards this dilemma with resulting confusion between what one believes is true and what he/she wishes were true, was a predictor of agreeability with euthanasia in this study. A considerable figure of roughly 50% of these medical students identified with this statement. This indicates that, although largely formally irreligious (41.9%), many

participants in this study manifest an internal conflict that seems to make them more prone to agree with hastened death. Finally, believing to have witnessed the presence of God or another divine entity was represented in belief number nine, the last of these five beliefs that predicted agreeability with euthanasia in this study. In line with what was previously stated, believing to have witnessed the presence of the divine can be a life-changing experience. Therefore, there are multiple ways one could be affected. As with belief number eight, however, here, too, very religious participants may be reluctant to identify themselves with a statement that refers to "other spiritual entities" beyond their monotheistic god. Nonetheless, as noted before, some religious people may be sympathetic to euthanasia even if they are aware that it stands against their religion's formal beliefs (Gielen et al., 2009b). No previous literature on the relationship between particular spiritual beliefs and agreeability towards euthanasia was found to properly justify these findings.

The contribution of this study was twofold. It further consolidated the well-established association between higher formal religiosity and disagreeability with euthanasia and it raised important questions about how particular spiritual – but not necessarily religious – beliefs could be at the basis of individuals' answers about euthanasia, particularly in an opposite direction to that seen with religiosity. Still, some limitations of this study must be pointed out: Only euthanasia was studied and not other forms of hastened death, namely PAS, nor other medical ethical dilemmas of interest, such as that of abortion; and only one generational cohort was significantly used, though positions towards such dilemmas are known to differ between generations (Marsala, 2019). The effect of these spiritual beliefs in other generations is not assured. Furthermore, spirituality stands on beliefs and perceptions that are often implicit and which may not be easily accessible through self-reporting.

Spirituality comes out of this study as a factor potentially determining one's view towards euthanasia. Spiritual but non-religious participants were found to be more agreeable towards euthanasia than were their religious counterparts. Other factors may

be playing a role along with non-religious spirituality here. Several ideologies and traits have been found to independently predict agreeability towards euthanasia, such as higher levels of education, higher levels of political liberalism and higher levels of extraversion (Bulmer et al., 2017). These authors also found a significant correlation between lower levels of authoritarianism and agreeability towards euthanasia. The degree to which these other factors may be associated with non-religious spirituality is not well-established, but is a target of interest for future research. This could help account for the effect of spirituality on younger generation cohorts. In whichever case, future studies are needed to more thoroughly assess the role of particular spiritual beliefs regarding metaphysical questions in one's point of view towards bioethical dilemmas such as that of euthanasia. The focus should be put on further dissecting different dimensions of spirituality, ideally comparing non-religious but spiritual individuals not only with religious and spiritual individuals but especially with non-religious and non-spiritual individuals, to better discern the full scope of the influence of spirituality on this matter.

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2 – Spiritual beliefs scale: development of an assessment tool in medical students

Resumo

Foi realizado um estudo metodológico com o objetivo de validar uma escala de concordância com crenças espirituais em estudantes de medicina. Criou-se uma escala, inicialmente composta por 11 itens, que foi aplicada numa amostra de 497 estudantes de medicina portugueses. A validação do instrumento teve por base uma caracterização psicométrica do mesmo, sendo necessário testar a sua fidelidade, através da consistência interna, com recurso ao coeficiente de *Alpha de Cronbach*, e validade, através da análise fatorial de acordo com da regra de *Kaiser*, seguida de rotação ortogonal do tipo *Varimax*. A escala final é constituída por 9 itens. Atestou-se a validade da mesma através da correlação de cada item com a escala total, tendo o valor mínimo de correlação sido de 0.32. O instrumento revelou um *Alpha de Cronbach* de 0.86. Através do método de condensação em componentes principais e segundo a regra de Kaiser, obteve-se uma escala composta por dois fatores: fator 1 "espiritualidade de base religiosa" e fator 2 "espiritualidade não religiosa".

***Palavras-chave**:* espiritualidade; crenças espirituais; religião; escala; estudantes de medicina

Abstract

We conducted a methodological study aiming to validate a scale of agreeability with spiritual beliefs in medical students. A scale of 11 items reporting to different dimensions of spirituality was applied on a sample of 497 Portuguese medical students. The instrument's validation relied on its psychometric characterization. Cronbach's Alpha Coefficient and factor analysis according to the Kaiser rule, followed by orthogonal rotation of Varimax, were performed to attest for the scale's fidelity and validity, respectively. The final scale was composed of 9 items. Each item was correlated with the whole scale, with the lowest correlation value being of 0.32. The scale's Cronbach's Alpha Coefficient was of 0.86. Through factorial analysis, two factors resulted: F1 "religion-based spirituality" and F2 "non-religious spirituality".

Keywords: Spirituality; spiritual beliefs; Religion; scale; Students, Medical

Spiritual beliefs scale: development of an assessment tool in medical students

Introduction

Spirituality is a core dimension to the human being (Dierendock, 2011; MacKinlay & Burns, 2017). As very complex beings, yet fundamentally limited in the search for our purpose and what we do not yet understand, we instinctively seek for answers to the problems that haunt our very existence. These include questions such as why are we here, what happens after we die, are there other dimensions than the one we most directly experience, are there supernatural or divine entities which have to do with our existence or in any way interfere with it, among countless others. The answer to each of these questions still ultimately lies beyond the reach of Science. Therefore, it is mostly up to other constructs to provide us with existential meaning (Georgiadou & Pnevmatikos, 2019; Preston & Shin, 2016; Wojtkowiak, Knibbe, & Goossensen, 2018).

Believing is innate to the human being, and its end products – beliefs – are crucial in our everyday journey through life, arming us with ways to expect what will happen, to explain what happens and to guide us in how to react to it (Bautista, Escobar, & Miranda, 2018; Forstmann & Burgmer, 2018). So, not only does questioning about our purpose and what we do not know come as normal, so does the drive to effectively answer these questions. Thus, each of us ultimately possesses individual beliefs regarding these metaphysical questions and other spiritual concepts (Bautista et al., 2018; Seitz, Paloutzian, & Angel, 2018). One's standpoint in such matters can range broadly from the denial of any spiritual dimension whatsoever to a life highly centred around spirituality such as that of very religious people (Cooperman et al., 2012).

Nonetheless, spirituality is not the same as religion. Rather, it encompasses religion (Preston & Shin, 2016). Religions are formal doctrinary ideologies that contain specific sets of beliefs. These provide answers to existential questions, attend to death-

related fears and teach individuals how to act in harmony with the will of divine entities or transcendent forces (Bautista et al., 2018; Norenzayan & Hansen, 2006; Nelson, Abeyta, & Routledge, 2019; Vail et al., 2010; Parker, 2016). Spirituality is bigger than that. Since there is an infinite number of beliefs we can think of regarding unknown dimensions, many spiritual beliefs might not be included in any religion at all, while still being related to spiritual concepts (Bering, 2002; Cooperman et al., 2012; Georgiadou & Pnevmatikos, 2019; Nelson et al., 2019; Preston & Shin, 2016; Schippers & Van Lange, 2006; Stavrova & Meckel, 2017; Wojtkowiak et al., 2018). Thus, religion is just one dimension of human spirituality. This is important because, when assessing people's spirituality, it becomes limiting to ask only about their religious affiliation (Dobbelaere & Voyé, 200; Gielen, Van den Branden, & Broeckhaert, 2009; Halman & Draulans, 2004). For once, religious affiliation could come with very different levels of religiosity (Cohen, Marcoux, & Bilsen, 2006; Danyliv & O'Neill, 2015; Gielen et al., 2009; Marsala, 2019), especially in developed countries, where people increasingly question their classical religious beliefs and practices (Ammerman, 2007; Chaves, 2011; Elder & George, 2016; Schwadel, 2010, 2011; Wojtkowiak et al., 2018); on the other hand, in an increasingly secularized world, non-religious spirituality too gains momentum (Cooperman et al., 2012; Wojtkowiak et al., 2018).

Much of our world hinges on scientific advances, on a mathematical, evidential basis. So is the case with medicine. However, while medicine itself is an extremely scientific field, it is worth reminding it is still largely performed by human beings. Therefore, these professionals too may hold very personal beliefs regarding metaphysical questions (Backus, Backus, & Page, 1995; Daaleman & Frey, 1999; Franzen 2014, 2018; Oxhandler, Polson, Moffatt, & Achenbaum, 2017). It is good practice not to allow for personal beliefs to interfere with professional practice (Ricou & Marina, 2020). Still, the question stands: to which extent does healthcare workers' spirituality interfere with their professional values? This question is relevant because health professionals are many times subjected to situations that raise complex ethical

questions (Campbell, Eyal, Muslimenta, & Haberer, 2015; Jansen, 2002; Ricou & Marina, 2020; Siden, 2005). These include not only hot-topics such as those of abortion, organ-donation or euthanasia, but also other important questions regarding patients' privacy and autonomy. In any case, life and death are what these professionals' work is ultimately all about; and so is spirituality.

Several different scales have been created to assess spiritual beliefs, levels of spirituality and religiosity previously (Delaney, 2005; Hills, Francis, & Robbins, 2005; Hodge, 2003; Riekki, Lindeman, & Lipsanen, 2013; Tobacyk, 2004). Although robust, these mostly focus on specific domains and not spirituality as a whole. That is, they target either religiosity measures, non-religious spiritual beliefs or take a vaguer approach. None of them seems to effectively set to target multiple dimensions of spirituality. Hence, these could be not the most effective at assessing formally religious, liberally spiritual and more undecided individuals' spiritual beliefs at once through one instrument alone. Furthermore, while some studies have indulged into assessing healthcare workers' spirituality before (Backus, Backus, & Page, 1995; Daaleman & Frey, 1999; Franzen 2014, 2018; Oxhandler, Polson, Moffatt, & Achenbaum, 2017), there is a particular lack of instruments specifically designed for the medical field. In Portugal concretely, no such instrument existed previously.

Medical students represent a new generation of health professionals inevitably moulded by very specific sociocultural aspects. It has been shown before that there is a strong generational cohort effect in spiritual beliefs and religiosity (Marsala, 2019), so the need emerges to understand what these future doctors' spiritual beliefs might be and how they might affect their clinical practice in the near-future.

This study aims at validating a new scale to assess spirituality in medical students. Based on previous literature (Delaney, 2005; Echebarría & Perez, 2017; Forstmann & Burgmer, 2018; Hills et al., 2005; Hodge, 2003; Riekki et al., 2013; Tobacyk, 2004), we created an 11-item scale and applied it to Portuguese medical students. We determined the scale should be practical and multidimensional, regarding

the several domains which make up spirituality. Therefore, we searched existing literature for common spiritual beliefs and selected subjects of interest (Bautista et al., 2018; Chakraborty et al., 2017; Georgiadou & Pnevmatikos, 2019; Gielen et al., 2009; Forstmann & Burgmer, 2018; Maranise, 2013; Stavrova & Meckel, 2016). The scale we used contains questions about different types of beliefs, namely religious beliefs, superstitions, the mind-body dualism, life after death, the existence of supernatural or divine entities and forces and the impact of these in the individual's life.

Methods

Participants

The target population of this study were Portuguese medical students. The sample was constituted by 497 medical students from all ten Portuguese Medicine Universities (Departamento de Ciências Biomédicas e Medicina – Universidade do Algarve [Department of Biomedical Sciences and Medicine of the University of Algarve], Escola de Medicina – Universidade do Minho [School of Medicine of the University of Minho], Faculdade de Ciências da Saúde – Universidade da Beira Interior [Faculty of Health Sciences of the University of Beira Interior] Faculdade de Ciências da Vida – Universidade da Madeira [Faculty of Life Sciences of the University of Madeira], Faculdade de Ciências e Tecnologia – Universidade dos Açores [Faculty of Science and Technology of the University of the Azores], Faculdade de Medicina da Universidade de Coimbra [Faculty of Medicine of the University of Coimbra], Faculdade de Medicina da Universidade do Porto [Faculty of Medicine of the University of Porto], Faculdade de Medicina de Lisboa [Faculty of Medicine of the University of Lisbon], Instituto de Ciências Biomédicas Abel Salazar [Abel Salazar Institute of Biomedical Sciences] and NOVA Medical School – Faculdade de Ciências Médicas [Faculty of Medical Sciences of the NOVA University of Lisbon]). Participants' ages ranged from 18 to 54 years old (M = 22.3, SD = 4.2), 71% of them were women and 29% were men.

Instruments

Items included in the scale were adapted from previous literature of reference in the evaluation of spiritual beliefs and submitted to analysis by an e-Delphi panel. The e-Delphi panel technique was used to collect information and to obtain agreement between a group of experts (Logue & Effken, 2013; Streiner & Norman, 2008). All items were analysed with respect to their theoretical and practical suitability. The 11 items were sent via e-mail to the panel, composed of 5 experts, including researchers and

healthcare professionals. Analysis was performed through a dichotomic classification of agree or disagree, with room for commentaries or suggestions on each item. Changes to the questions were made based on the suggestions and comments made by the panel. We conducted as many phases as needed to reach a consensus among the panel of at least 80% (Logue & Effken, 2013; Streiner & Norman, 2008).

The 11 items initially designed measure medical students' degree of agreeability with the spiritual beliefs or measures of spirituality presented, on a likert scale from 1 to 6, with 1 being complete disagreeability and 6 complete agreeability. Beliefs number four and five were inversely quoted: higher agreeability with these statements suggests lesser spirituality.

The scale items were originally created and applied in Portuguese and posteriorly translated by the authors for publication purposes.

Item 1 – A mente é uma forma de energia independente do corpo, estando-lhe apenas temporariamente confinada [The mind is a form of energy independent from the body, being only temporarily confined to it].

Item 2 – A alma existe [The soul exists].

Item 3 – Acredito que possam existir outras dimensões depois da morte, como a reencarnação ou outra [I believe there could be other dimensions after death, such as reincarnation or other].

Item 4 – Somos apenas carne e osso e toda a nossa vivência cessa com a morte [We are but flesh and bones and all of our life experience ends with death].

Item 5 – Eu gostaria que houvesse um propósito para a minha existência, mas tudo me faz crer que ela termina definitivamente com a morte [I would like for my existence to have a purpose, but everything leads me to believe that it completely ends with death].

Item 6 – Acredito que existe uma força universal transcendente que não posso ver diretamente, mas cuja energia posso sentir [I believe there is a transcendent universal force. which I cannot see directly. but the energy of which I can feel].

Item 7 – Existem certas ações ou símbolos que acarretam Sorte ou Azar [There are certain actions or symbols that convey good or bad luck].

Item 8 – As minhas crenças espirituais, religiosas ou metafísicas ajudam-me a lidar com os desafios e decisões importantes da vida [My spiritual, religious or metaphysical beliefs help me cope with the important challenges and decisions of my life].

Item 9 – Acredito já ter testemunhado uma manifestação da presença de Deus ou outra entidade divina na minha vida [I believe to have witnessed a manifestation of the presence of God or other divine entity in my life before].

Item 10 – Acredito na existência de fenómenos paranormais [I believe in the existence of paranormal phenomena].

Item 11 - É possível comunicar com os mortos [It is possible to communicate with the dead].

Procedures

Data were collected by an on-line questionnaire shared with participants via a link through direct e-mail. Universities' Students' Association supported us in sending out the on-line questionnaire. Answers were collected between January and February 2020, through the Google Forms platform. Only this study's authors had access to the data.

Ethical procedures were accomplished via analysis and approval of the study by an independent Ethical Committee (Comissão de Ética para a Saúde – Centro Hospitalar de São João [Ethics Committee of São João Hospital Center]). All students

participated in the study anonymously and voluntarily. No reward was made available for participating in the study. On-line informed consent was obtained.

Data analysis

Data analysis was conducted using Statistical Package for the Social Sciences (IBM SPSS, version 26.0). Fidelity was verified through internal consistency using the Cronbach's Alpha coefficient and validity was tested using factor analysis according to the Kaiser rule, followed by orthogonal rotation of Varimax.

The validation of an instrument of measurement has the premise of attesting its validity and fidelity (Anastasi & Urbina, 2000). In this context, fidelity of the whole scale and fidelity of the scale excluding each item individually (so as to reach higher fidelity) were assessed through the Cronbach's Alpha coefficient. Cronbach's Alpha provides internal consistency evaluation and ranges from 0 to 1, with values closer to 1 indicating higher internal consistency. According to Hill & Hill (2002), a value of Cronbach's Alpha above 0.8 expresses good internal consistency, nonetheless, values above 0.6 are acceptable when few numbers of items are tested.

The validity, that is, whether the test effectively measures what it aims at measuring, was assessed through the correlation between each item and the whole scale and the analysis of the scale factors' weight. If an item's correlation is higher than 0.2, through factorial analysis in accordance with the method of condensation in main components, with Kaiser rule (latent roots equal or superior to one) and Varimax orthogonal rotation (Pestana & Gageiro, 2014), it means that item is a good indicator of the whole instrument (Streiner & Norman, 2008).

Results

Four-hundred and ninety-seven medical students, with ages ranging from 18 to 54 years old (M = 22.3, SD = 4.2) and 71% of which were female, participated in the validation of the scale of agreeability with spiritual beliefs, initially composed of 11 items.

The reliability of the scale was attested by the Cronbach's Alpha coefficient for all the items that compose the instrument, as well as after exclusion of items. After excluding items four and five, as these decreased the instrument's internal consistency, a Cronbach's Alpha of 0.86 was attained, as seen in Table 1. This value of Cronbach's Alpha coefficient reflects good internal consistency (Hill & Hill, 2002).

When correlated with the whole scale, every item scored above 0.2, with the minimum being of 0.31, which indicates that all items are good indicators of the whole scale (Streiner & Norman, 2008).

Table 1

Scale's descriptive statistics, corrected item-total correlation and Cronbach's Alpha

Item's description	M	SD	Corrected Item-Total Correlation	Cronbach's Alpha excluding items
1. The mind is a form of energy independent from the body, being only temporarily confined to it.	2.77	1.49	0.49	0.86
2. The soul exists.	3.77	1.72	0.76	0.83
3. I believe there could be other dimensions after death, such as reincarnation or other.	3.21	1.74	0.72	0.84
6. I believe there is a transcendent universal force which I cannot see directly but the energy of which I can feel.	3.58	1.75	0.69	0.84
7. There are certain actions or symbols that convey good or bad luck.	2.28	1.41	0.31	0.87
8. My spiritual, religious or metaphysical beliefs help me cope with the important challenges and decisions of my life.	3.55	1.77	0.56	0.85
9. I believe to have witnessed a manifestation of the presence of God or other divine entity in my life before.	2.55	1.83	0.67	0.84
10. I believe in the existence of paranormal phenomena.	2.54	1.56	0.61	0.85

11. It is possible to communicate with the dead.	1.81	1.21	0.52	0.86
			Total	**0.86**

Validity was assessed through exploratory factor analysis with principal axis factoring, varimax orthogonal rotation and factor extraction respecting Kaiser's rule. Suitability of the sample was analysed according to Kayser-Meyer-Olkin's statistic (0.70 to 0.80 – middling; >0.80 – meritorious) and Barlett's Sphericity Test ($p<0.05$). The sample was found suitable with KMO = 0.869, $X^2_{(36)} = 1958.88$, $p < 0.001$ (Table 2).

Factorial and discriminant validity of the items was assessed through the factorial weight values (elevated to one factor only and higher than 0.50). The resulting factorial structure is composed of two factors: F1 "Religion-based spirituality" and F2 "Non-religious spirituality", which after the Varimax rotation method explain 62.06% of the total variance (Table 2). In Table two, it is possible to note that the value of the Bartlett Sphericity Test was 1958.88 for a $p = 0.000$, with a meritorious Kaiser-Mayer-Olkin value (0.869), explaining a variance of 62.06%, which reflects a satisfactory factor analysis, resulting in a bifactorial scale composed of 9 items.

Table 2

Exploratory factor analysis

		Communalities	**Factors**	
Item	**Description**		**Religion-based spirituality**	**Non-religious spirituality**
Item 2	The soul exists.	0.73	0.77	
Item 3	I believe there could be other dimensions after death, such as reincarnation or other.	0.65	0.66	
Item 6	I believe there is a transcendent universal force which I cannot see directly but the energy of which I can feel.	0.64	0.74	
Item 8	My spiritual, religious or metaphysical beliefs help me cope with the important challenges and decisions of my life.	0.71	0.84	
Item 9	I believe to have witnessed a manifestation of the presence of God or other divine entity in my life before.	0.70	0.82	
Item 1	The mind is a form of energy independent from the body, being only temporarily confined to it.	0.41		0.53
Item 7	There are certain actions or symbols that convey good or bad luck.	0.55		0.74

Item 10	I believe in the existence of paranormal phenomena.	0.64		0.71
Item 11	It is possible to communicate with the dead.	0.57		0.71
Eigenvalues % Variance (62.06%)			48.87	13.19
Number of Items		9	5	4
KMO = 0.869 Barlett's Test of Sphericity = 1958.88, p = 0.000				

Discussion

Spirituality is a nuclear resource for human beings as they seek for existential meaning (Georgiadou & Pnevmatikos, 2019; Preston & Shin, 2016; Wojtkowia et al., 2018). Healthcare workers face many bioethical dilemmas which interfere with core values about life and death (Campbell et al., 2015; Jansen, 2002; Ricou & Marina, 2020; Siden, 2005). It would be interesting to assess what their spiritual beliefs are and how they might compare to other populations. More importantly, it is relevant to study the potential influence between their spirituality and their professional values. However, there is a lack of instruments to assess spirituality in healthcare workers.

Two factors stand out in this scale – religion-based spirituality (F1) and non-religious spirituality (F2). This distinction is relevant because the spiritual landscape of developed populations is rapidly changing (Gielen et al., 2009; Halman & Draulans, 2004) and thus emerges the need to study it. F1 "religion-based spirituality" reflects more static, traditional religious constructs, such as the soul (item 2), reincarnation (item 3) and the significant role of religion in life, both through religious teachings (item 8) and the perceived presence of God (item 9). F2 "non-religious spirituality", on the contrary, reflects a more liberal approach to spirituality, with beliefs not associated with any classical religion and which do not centre around the presence of the religious paternalistic God, such as luck (item 7), paranormal phenomena (item 10) and the psychic ability of communicating with the dead (item 11). This difference is especially notorious when items one and two are compared. At a first glance, both refer to the belief in the mind-body dualism, with the mind standing for our thoughts, emotions and all-around more abstract existence and the latter referring to our physical body. Upon analysis, it is noticeable that item 1 relates the experience of the mind to the soul, while item 2 refers to the mind as a form of energy. The soul is a classical religious concept (F1), whilst the viewing of spiritual concepts as forms of energy is a more broad and free approach (F2).

One important limitation to this study is that spiritual beliefs and perceptions are often implicit and may not be easily accessible through self-reporting.

This study allowed for the validation of a scale of agreeability with spiritual beliefs with adequate validity and fidelity, which was ultimately composed of 9-items. In order to render this instrument more robust in regard to its psychometric characteristics, further studies with bigger samples should be conducted. Moreover, replicating this study using the same conditions and the same participants in two different moments in time may be useful to attest the robustness of the instrument. Lastly, it would be of interest to study the behaviour of this instrument in other populations than that of medical students.

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Conclusão

Duas linhas de evolução da sociedade são evidentes no último século: por um lado, a ciência e a tecnologia vêm avançando exponencialmente e impondo mudanças radicais no nosso modo de viver; por outro, o Ser-humano moderno vem crescentemente reivindicando direitos e liberdades individuais. As duas parecem tender para uma indiferença quase repulsiva a atos de reflexão. Isto é, o ritmo ofegante com que ganham força parece querer ser imune a ponderações éticas e multidisciplinares sobre os vários sistemas direta e indiretamente envolvidos por estas questões. Se a ciência tem, por regra, frutos diretamente visíveis no quotidiano e nos indicadores de desenvolvimento humano, como a esperança média de vida, esta transição de valores humanos que a acompanha tem consequências menos claras. Depois de vários milénios de lenta adaptação ao progressivo desenvolvimento das sociedades, importa, agora, refletir se a mente humana está preparada para acompanhar o ritmo alucinante das grandes e rápidas alterações e revoluções dos tempos que correm. A coexistência, em larga escala, de valores religiosos tradicionais e conservadores, com valores modernos de primazia quase puramente científica e valores pós-modernos de liberalismo ideológico é um sinal dos tempos revolucionários em que vivemos. Assim, o estudo e a reflexão sobre estas questões são essenciais para que se possa, não só, compreender os fenómenos de interesse psicossocial e cultural que as movem, como também clarificar aspetos fundamentais que lhes são inerentes e que importa discutir no âmbito de grandes alterações de ordem legal ou social, com consequências de potencial elevada magnitude no modo como vivemos.

É neste contexto que este estudo se revela pertinente, numa sociedade cuja população discute, por vezes de forma pouco informada (também por falta de investigação científica), questões de relevo como a da eutanásia. Ainda assim, apesar da falta de estudos, o assunto foi debatido em Assembleia da República e aprovaram-se projetos de lei com vista à despenalização da sua prática. Isto vem comprovar que

se vêm produzindo grandes alterações no modo como vivemos com escassa ponderação científica e ética prévia de base.

A espiritualidade é uma dimensão nuclear do indivíduo, não fosse ele constitucionalmente impotente na procura de respostas relativas à sua existência. Como tal, a espiritualidade é determinante na forma como o ser humano responde aos desafios da vida, em especial, aqueles que invocam os conceitos de vida e morte, como é o caso da eutanásia. Não será, portanto, surpreendente que as crenças espirituais individuais, a respeito destes valores metafísicos, tenham um papel fundamental na resposta a dilemas éticos como este. E, conhecendo-se o papel doutrinário e conservador das religiões principais, também não será surpreendente que os indivíduos mais religiosos se oponham mais à eutanásia, como um atentado à sacralidade da vida e à soberania do poder divino. Por outro lado, a resposta que indivíduos com crenças espirituais fortes, mas com parca afiliação religiosa formal, poderão dar a estes dilemas não é clara, e reveste-se de interesse, pois estes indivíduos não veem a sua opinião ser moldada por ensinamentos externos. Para além disso, tem-se observado um aumento da popularidade desta espiritualidade não religiosa no contexto do pós-modernismo ideológico.

Neste estudo, destacaram-se três tipos essenciais de espiritualidade individual: espiritualidade de base religiosa, espiritualidade não religiosa e ausência de espiritualidade ou de religiosidade. A religiosidade parece associar-se a maior oposição à eutanásia. A espiritualidade, enquanto medida pelas crenças espirituais apresentadas, indica maior concordância. Algumas das crenças constituíram preditores de concordância, refletindo um papel fulcral da espiritualidade na definição da posição face a este tipo de dilemas éticos. Esta relação aparentemente paradoxal entre a espiritualidade e a religiosidade formal carece de investigação futura a fim de ser melhor compreendida.

A partir da amostra obtida, foi possível validar uma escala de aferição das crenças espirituais em estudantes de medicina, com nove itens, que terá interesse para ser usada, futuramente, em estudos com outras amostras.

Assim, este trabalho produziu um contributo duplo: permitiu chamar a atenção para a espiritualidade como um potencial determinante implícito fundamental para a resposta do ser humano ao dilema da eutanásia e permitiu criar uma escala de avaliação da espiritualidade em estudantes de medicina.

Agradecimentos

Deus quer, o Homem sonha, a obra nasce (Fernando Pessoa). Assim vai o ditado. Se, como reiterado ao longo deste trabalho, a existência de Deus e a vontade divina são, tanto quanto a mais exaustiva distensão das nossas limitações permite discernir, de domínio meramente especulativo (ainda que possam residir apenas para lá do alcance das mesmas), mais palpáveis são a contribuição de influências de vida no brotar de uma ideia e de atos concretos – e bem humanos – de auxílio na tradução desta para o nascer da *obra*.

Assim, desde a sua conceção até ao produto final, foram várias as contribuições fundamentais para a concretização deste projeto, que, sem elas, teria sido não apenas substancialmente mais difícil, mas também mais pobre.

Em primeiro lugar, como é natural, devo um agradecimento à minha família, e, em especial, aos meus pais, sem os quais, sem mais a acrescentar, nada seria possível.

De seguida, um especial agradecimento à equipa de orientação deste projeto, pela enorme disponibilidade e simpatia com que me presentearam desde o início, tendo sido os meus grandes guias na realização deste projeto. Ao Professor Doutor Miguel Ricou e à Doutora Sílvia Marina, o meu sincero obrigado.

Por último, não fosse a amizade a própria matéria com que construímos o barco com que enfrentamos as correntes da vida, deixo um agradecimento geral aos amigos que mais intimamente estiveram presentes durante estes meses, e que me têm vindo a acompanhar nesta caminhada, que agora termina, que é a Universidade.

Anexos

Anexo A

Questionário "Eutanásia e crenças espirituais em estudantes de medicina"

A eutanásia é um dos grandes desafios bioéticos dos nossos tempos – qual deverá ser o papel dos profissionais de saúde quando confrontados com um pedido de um doente para morrer? Antes de toda e qualquer política legislativa sobre o assunto, parece imprescindível, não só conhecê-la, como também entender em que se baseia e como varia a posição da sociedade em geral, dos doentes e dos médicos, nomeadamente a influência de crenças pessoais e espirituais. Neste sentido, vimos convidá-lo(a) a responder a um pequeno número de questões sobre o tema.

O presente estudo pretende chegar à raiz das opiniões de estudantes de medicina acerca da eutanásia voluntária e perceber se determinadas crenças espirituais podem estar na base das suas posições relativamente a esta problemática. O principal objetivo é perceber se a aceitação de eutanásia em estudantes de medicina, em função de determinada situação especifica, é influenciada pelas crenças espirituais.

Trata-se de um estudo inserido no mestrado integrado em Medicina da Faculdade de Medicina da Universidade do Porto, sob a orientação do Professor Doutor Miguel Ricou.

Os participantes não têm riscos ou benefícios imediatos, porém, da análise dos dados podem resultar sugestões para o aprofundamento do conhecimento neste domínio.

Encontram-se assegurados todos os procedimentos éticos relativos a este tipo de estudo. A segurança e a proteção dos dados são asseguradas através do armazenamento dos mesmos num equipamento protegido com palavra-passe, acedido apenas pelos investigadores. O tratamento dos dados é considerado legal quando o participante dá o seu consentimento. Neste estudo, o participante dá o seu

consentimento através de uma ação específica, autorizada e inequívoca por meio eletrónico. A confidencialidade e a privacidade dos dados são garantidas pelo anonimato das respostas. Não é requerida qualquer autenticação eletrónica.

O questionário é constituído por 3 grupos de perguntas, que demoram aproximadamente 5 minutos a responder.

Relembramos que este questionário se destina apenas a estudantes de Medicina.

Qualquer esclarecimento adicional, pode contactar:

Alexandre de Sousa, e-mail: up201402868@med.up.pt

Li a informação acima e considero que estou informado acerca do objetivo do estudo e o meu papel nele e aceito participar voluntariamente neste estudo respondendo ao questionário.

Sim □

Concordo que os meus dados sejam utilizados para fins de investigação.

Sim □

I – Para cada questão, assinale apenas a opção que melhor se aplica a si.

1. Sexo

   □ Feminino

   □ Masculino

   □ Outra opção: _____

2. Idade

   _____

3. Ano de curso que frequenta

□ 1.º

□ 2.º

□ 3.º

□ 4.º

□ 5.º

□ 6.º

4. Faculdade

□ Escola de Medicina – Universidade do Minho

□ Faculdade de Medicina da Universidade do Porto - Universidade do Porto

□ Instituto de Ciências Biomédicas Abel Salazar - Universidade do Porto

□ Faculdade de Ciências da Saúde - Universidade da Beira Interior

□ Faculdade de Medicina da Universidade de Coimbra - Universidade de Coimbra

□ NOVA Medical School | Faculdade de Ciências Médicas - Universidade Nova de Lisboa

□ Faculdade de Medicina de Lisboa - Universidade de Lisboa

□ Departamento de Ciências Biomédicas e Medicina - Universidade do Algarve

□ Faculdade de Ciências e Tecnologia - Universidade dos Açores

□ Faculdade de Ciências da Vida - Universidade da Madeira

5. Com que ideologia religiosa se identifica?

□ Agnosticismo

□ Anglicanismo

□ Ateísmo

□ Budismo

□ Catolicismo

□ Espiritismo

□ Fé Bahá'í

□ Hinduísmo

□ Igreja Adventista do Sétimo Dia

□ Igreja de Jesus Cristo dos Santos dos Últimos Dias

□ Islamismo

□ Judaísmo

□ Protestantismo

□ Testemunha de Jeová

□ Outra: _____

6. Considera-se praticante da ideologia religiosa que assinalou?

□ Sim

□ Não

□ Não sei dizer

□ Não aplicável

7. Com que regularidade frequenta, normalmente, um local de culto religioso, como a igreja ou equivalente?

□ Nunca

□ 1-3 vezes por ano

□ Mais do que 3 vezes por ano, mas menos do que 1 vez por mês

□ 1-3 vezes por mês

□ Pelo menos 1 vez por semana

□ Não aplicável

II – As seguintes afirmações pretendem avaliar as crenças espirituais dos participantes. Assinale o algarismo, de 1 (discordo totalmente) a 6 (concordo totalmente), que mais se aplica à sua opinião.

1. A mente é uma forma de energia independente do corpo, estando-lhe apenas temporariamente confinada.

	1	2	3	4	5	6	
Discordo totalmente	☐	☐	☐	☐	☐	☐	Concordo totalmente

2. A alma existe.

	1	2	3	4	5	6	
Discordo totalmente	☐	☐	☐	☐	☐	☐	Concordo totalmente

3. Acredito que possam existir outras dimensões depois da morte, como a reencarnação ou outra.

	1	2	3	4	5	6	
Discordo totalmente	☐	☐	☐	☐	☐	☐	Concordo totalmente

4. Somos apenas carne e osso e toda a nossa vivência cessa com a morte.

	1	2	3	4	5	6	
Discordo totalmente	☐	☐	☐	☐	☐	☐	Concordo totalmente

5. Eu gostaria que houvesse um propósito para a minha existência, mas tudo me faz crer que ela termina definitivamente com a morte.

	1	2	3	4	5	6	
Discordo totalmente	☐	☐	☐	☐	☐	☐	Concordo totalmente

6. Acredito que existe uma força universal transcendente que não posso ver diretamente, mas cuja energia posso sentir.

	1	2	3	4	5	6	
Discordo totalmente	☐	☐	☐	☐	☐	☐	Concordo totalmente

7. Existem certas ações ou símbolos que acarretam Sorte ou Azar.

	1	2	3	4	5	6	
Discordo totalmente	☐	☐	☐	☐	☐	☐	Concordo totalmente

8. As minhas crenças espirituais, religiosas ou metafísicas ajudam-me a lidar com os desafios e decisões importantes da vida.

	1	2	3	4	5	6	
Discordo totalmente	☐	☐	☐	☐	☐	☐	Concordo totalmente

9. Acredito já ter testemunhado uma manifestação da presença de Deus ou outra entidade divina na minha vida.

	1	2	3	4	5	6	
Discordo totalmente	☐	☐	☐	☐	☐	☐	Concordo totalmente

10. Acredito na existência de fenómenos paranormais.

	1	2	3	4	5	6	
Discordo totalmente	☐	☐	☐	☐	☐	☐	Concordo totalmente

11. É possível comunicar com os mortos.

	1	2	3	4	5	6

Discordo totalmente ☐ ☐ ☐ ☐ ☐ ☐ Concordo totalmente

III – As seguintes situações foram retiradas do estudo "Determinantes na opinião sobre eutanásia em amostra de médicos portugueses", de Sofia da Silva, Luís Azevedo e Miguel Ricou. Pede-se que indique qual o seu grau de concordância com a aplicabilidade da eutanásia em cada situação apresentada (1 - discordo totalmente; 6 - concordo totalmente):

a. Adulto com doença incurável e dor intensa (8-10, numa escala de 0 a 10, em que 10 é a dor máxima, insuportável) pede para terminar a sua vida.

1 2 3 4 5 6

Discordo totalmente ☐ ☐ ☐ ☐ ☐ ☐ Concordo totalmente

b. Adulto com doença incurável, muito incapacitante (problema grave ou completo na Classificação Internacional de Funcionalidade, Incapacidade e Saúde, da Organização Mundial de Saúde), pede para terminar a sua vida.

1 2 3 4 5 6

Discordo totalmente ☐ ☐ ☐ ☐ ☐ ☐ Concordo totalmente

c. Adulto com doença terminal referencia um sofrimento insuportável e pede para terminar sua vida.

1 2 3 4 5 6

Discordo totalmente ☐ ☐ ☐ ☐ ☐ ☐ Concordo totalmente

d. Adulto com doença terminal, em evolução, ainda com boa qualidade de vida, pede para terminar sua vida.

1 2 3 4 5 6

Discordo totalmente ☐ ☐ ☐ ☐ ☐ ☐ Concordo totalmente

e. Adulto com doença incurável e incapacidade permanente de manifestar sua vontade. Os familiares pedem ao médico para terminar a sua vida, afirmando que essa seria a sua vontade.

1 2 3 4 5 6

Discordo totalmente ☐ ☐ ☐ ☐ ☐ ☐ Concordo totalmente

f. Criança de três anos com doença incurável e dores crônicas difíceis de suportar. Os pais pedem ao médico para terminar sua vida.

1 2 3 4 5 6

Discordo totalmente ☐ ☐ ☐ ☐ ☐ ☐ Concordo totalmente

Anexo B

OMEGA – Journal of Death and Dying: submission guidelines

Instructions for Authors

Manuscripts can be submitted in APA style

to **https://mc.manuscriptcentral.com/omega.**

Please refer to the latest Publication Manual of the American Psychological Association. A synopsis of this manual is available from the American Psychological Association. http://apa.org/

Originality Authors should note that only original articles are accepted for publication. Submission of a manuscript represents certification on the part of the author(s) that neither the article submitted, nor a version of it has been published, or is being considered for publication elsewhere.

Format Prepare manuscripts according to the latest Publication Manual of the American Psychological Association. A synopsis of this manual is available from the American Psychological Association. http://apa.org

Manuscripts Manuscript must be word processed, double-spaced, with wide margins. Paginate consecutively starting with the title page, which should be uploaded as a separate file. The organization of the paper should be indicated by appropriate headings and subheadings. Please be sure to remove all self-identifying information from the manuscript file before submitting. Author information should only be included on the title page.

Style Technical terms specific to a particular discipline should be defined. Write for clear comprehension by readers from a broad spectrum of scholarly and professional backgrounds. Avoid acronyms and footnoting, except for acknowledgments.

Permissions Authors are responsible for all statements made in their manuscript and for obtaining from copyright owners to reprint or adapt a table or figures, or to reprint a quotation of 500 words or more. Authors should write to original author(s) and publisher to request nonexclusive world rights in all languages to use the material in the article and in future editions. Provide copies of all permission and credit lines obtained at the time of manuscript submission.

Manuscript Submission Guidelines:

Manuscript must be word processed using Word or Open Office Writer, double-spaced, with wide margins. Paginate consecutively, starting with the title page.

Title Pages should be uploaded as a separate file and include the follow as is applicable:

• Full article title

• Acknowledgements/credits

• Each author's complete name and institutional affiliation(s)

• Grant numbers and/or funding information

• Corresponding author (name, address, phone/fax, e-mail)

• Up to five keywords as it should appear if it were to be published.

Abstracts of 100 to 150 words are required to introduce each article.

Most articles are between 5000-7500 words and while we accept long pieces that mandates additional evaluation because of space limitations.

Manuscripts should be saved in a Word .doc or .docx file type. The organization of the paper should be indicated by appropriate headings and subheadings.

Please be sure to remove all self-identifying information from the manuscript file before submitting.

When possible, all illustrations, figures, and tables are placed within the text at the appropriate points, rather than at the end. If this is not possible:

Figures should be referenced in text and appear in numerical sequence starting with Figure 1. Line art must be original "drawings" in black ink proportionate to our page size. Indicate top and bottom of figure where confusion may exist. Labeling should be 8 point type. Clearly identify all figures. Large figures should be drawn on separate pages and their placement within the text indicated by inserting:

Insert Figure 1 here

Tables must be cited in text in numerical sequence starting with Table 1. Each table must have a descriptive title. Any footnotes to tables are indicated by superior lower case letters. Large tables should be typed on separate pages and their approximate placement indicated within text by inserting:

Insert Table 1 here

---

[i] Marina, S., Costa-Maia, I., & Ricou, M. (2019). Definição do Conceito de Morte Antecipada em Português. Acta Médica Portuguesa, 32(6), 474. https://doi.org/10.20344/amp.12359

[ii] Define e regula as condições em que a antecipação da morte, por decisão da própria pessoa com lesão definitiva ou doença incurável e fatal e que se encontra em sofrimento duradouro e insuportável, não é punível [Defines and regulates the conditions under which the anticipation of death, by decision of the person with a definitive lesion or incurable and fatal disease and who is under unbearable and lasting suffering, is not punishable], 2018; Define o regime e as condições em que a morte medicamente assistida não é punível [Defines the regime and conditions under which medically assisted death is not punishable], 2018; Procede à 47.ª alteração ao Código Penal e regula as condições especiais para a prática de eutanásia não punível [Proceeds to the 47th change to the Criminal Code and regulates the special conditions for the practice of non-punishable euthanasia], 2018; Regula o acesso à morte medicamente assistida [Regulates the access to medically assisted death], 2017

[iii] Define e regula as condições em que a antecipação da morte, por decisão da própria pessoa com lesão definitiva ou doença incurável e fatal e que se encontra em sofrimento duradouro e insuportável, não é punível [Defines and regulates the conditions under which the anticipation of death, by decision of the person with a definitive lesion or incurable and fatal disease and who is under unbearable and long-lasting suffering, is not punishable] , 2019; Define o regime e

as condições em que a morte medicamente assistida não é punível [Defines the regime and conditions under which medically assisted death is not punishable], 2019; Procede à 50.ª alteração ao Código Penal e regula as condições especiais para a prática de eutanásia não punível [Proceeds to the 50th change to the Criminal Code and regulates the special conditions for the practice of non-punishable euthanasia], 2019; Regula a antecipação do fim da vida, de forma digna, consciente e medicamente assistida [Regulates the anticipation of the end of live in a dignified conscious and medically-assisted way], 2020; Regula o acesso à morte medicamente assistida [Regulates the access to medically assisted death], 2019.