Palliative and Supportive Care

cambridge.org/pax

Correlates of perceived death competence: What role does meaning-in-life and quality-of-life play?

Lauren Miller-Lewis, B.PSYCH. (HONS), PHD.[1], Jennifer Tieman, B.SC. (HONS), M.B..A, PH.D.[1], Deb Rawlings, R.N., B.SC. (HONS), GRADCERTEDUCATION (HIGHER ED), M.P.H.[1], Christine Sanderson, B.A., B.M.B.S., M.P.H., F.R.A.C.P.[2,3] and Deborah Parker, R.N., B.A., GRADCERTLEADERSHIP, M.SOC.SC., PH.D.[2]

[1]Palliative and Supportive Services, College of Nursing and Health Sciences, Flinders University, Adelaide, SA, Australia; [2]Faculty of Health, University of Technology Sydney, Ultimo, NSW, Australia and [3]Palliative Medicine, Calvary Health Care, Kogarah, NSW, Australia

Original Article

Cite this article: Miller-Lewis L, Tieman J, Rawlings D, Sanderson C, Parker D (2019). Correlates of perceived death competence: What role does meaning-in-life and quality-of-life play? *Palliative and Supportive Care* **17**, 550–560. https://doi.org/10.1017/S1478951518000937

Received: 27 September 2018
Revised: 2 October 2018
Accepted: 2 October 2018

Keywords:
Attitude to death; Bereavement; Palliative care; Quality of life; Value of life

Author for correspondence:
Lauren Miller-Lewis, Palliative and Supportive Services, College of Nursing and Health Sciences, Flinders University, GPO Box 2100, Adelaide SA 5001 Australia. E-mail: lauren.miller@flinders.edu.au

Abstract

Objective. Understanding factors that are associated with more adaptive death attitudes and competencies can inspire future health-promoting palliative care strategies and inform approaches to training and development for health professionals. The potential importance of meaning, purpose, quality, and values in life for promoting adaptive death attitudes has been highlighted, but there is limited research in this area, particularly in relation to death competence. The purpose of this cross-sectional study was to develop an understanding of demographic and life-related factors associated with perceived death competence, such as meaning in life and quality of life.

Method. During the course enrollment period of a Massive-Online-Open-Course about death and dying, 277 participants completed questionnaires on death competence, meaning in life, quality of life, and sociodemographic background.

Result. Findings indicated that greater presence of meaning in life, quality of life, age, death experience, and carer experience were each statistically significant unique predictors of death competence scores. Life-related variables were more strongly associated with death competence than demographic variables. Bereavement experience and experience caring for the dying was associated with greater death competence, but there were no differences on death competence between health professionals and the general community. Above all other factors, the presence of meaning in life was the strongest predictor of higher perceived competence in coping with death.

Significance of results. The findings demonstrate important interconnections between our attitudes about life and death. Knowledge of factors associated with poorer death competence may help identify those at risk of greater distress when facing death, and might prove useful additions to bereavement risk assessments. Understanding factors associated with greater death competence in health professionals and volunteers may help predict or prevent burnout and compassion fatigue, and help identify who would benefit from additional training and support. Future longitudinal studies including both health professionals and the general community are needed to determine the effect adaptive attitudes toward meaning in life can potentially have on bolstering subsequent adaptive coping and competence regarding death and dying.

Introduction

Faced with an aging population and the predicted rise in death rates, which will increasingly affect families and communities, the need to understand how the community copes with death is an important priority (Doka, 2015; Kellehear, 2015). Understanding factors that are associated with more adaptive death attitudes and death competencies can inform the development of future health-promoting palliative care strategies that aim to encourage death conversations, death preparedness and planning, and acceptance of death as a normal part of life in the general community (Cox et al., 2013). It can also assist with service planning for end-of-life care and inform approaches to training and development for health professionals regarding improving competence to cope with death (Chan et al., 2015; Claxton-Oldfield et al., 2007; Sansó et al., 2015).

There is limited empirical knowledge about 21st century community attitudes toward death and dying (Collins et al., 2017; Cox et al., 2013). In Australia, studies have generally been small and focused on death attitudes of health professionals or patients (Collins et al., 2017; Hack et al., 2010; Halliday & Boughton, 2008; Peters et al., 2013; Tranter et al., 2016), although two studies have examined death fear/anxiety in samples of Australian university students (Bath, 2010; Davis et al., 2016). Similarly, previous research worldwide has focused predominantly on death attitudes in relation to anxiety and fear, with calls for a broader focus including strengths-based death competencies and coping skills (Neimeyer et al., 2003; Robbins, 1994; Wass, 2004). Death competence can be defined as a construct representing a range of perceived knowledge and skills for coping with death, along with attitudes and beliefs about these abilities (Robbins, 1994). International studies have found greater death competence to be associated with older age (Haig, 2014; Robbins, 1991a, 1991b, 1992, 1994; Seo et al., 2013), but not gender (Camarneiro & Gomes, 2015; Haig, 2014; Reimer, 2007; Robbins, 1991a, 1992; Schmidt-RioValle et al., 2012; Siracusa et al., 2011), and the limited findings regarding the role of religiosity and spirituality (Haig, 2014; Seo et al., 2013) and educational level (Seo et al., 2013; Siracusa et al., 2011) have been inconsistent. The role of socioeconomic status and occupation remains unknown (Kim & Hwang, 2014; McNeely, 1998). Research with nurses, hospital volunteers, and family caregivers suggest that greater experience in providing care for terminally ill people is associated with greater death competence (McNeely, 1998; Reimer, 2007; Robbins, 1992; Seo et al., 2013). Similarly, personal experience with death/bereavement has been found related to greater death competence in volunteers, and greater health-professional self-competence in death work (Chan et al., 2015; Robbins, 1994). Overall, research on correlates of death competence in the general community is scarce worldwide, and no studies on factors associated with death competence in Australian-based samples exist (Reimer, 2007; Robbins, 1991a; Siracusa et al., 2011).

The interconnection between how we feel about death and how we live has been long-stated, with the assertion that confronting mortality existentially enables us to live more meaningfully (Cozzolino & Blackie, 2013; Frankl, 2011; Robbins, 1991a, 1991b; Taubman-Ben-Ari, 2011; Yalom, 1980). The potential importance of meaning, purpose, quality, and values in life for promoting adaptive attitudes toward death has been highlighted, but there is a lack of research in this area (Davis et al., 2015; Taubman-Ben-Ari, 2011). Evidence of the interplay between meaning in life and death awareness has been shown in experimental studies manipulating mortality salience (Cozzolino & Blackie, 2013; Taubman-Ben-Ari, 2011), and although studies have found greater meaning in life related to lower death anxiety/fear (Durlak, 1972; Kim, 2015; Meyersburg & McNally, 2011; To & Chan, 2016), very little is known about the strength or direction of its relationship with death competence. Two studies found a greater sense of purpose in life related to higher death competence in university students (Robbins, 1991a) and palliative care professionals (Galiana et al., 2017). In Hong Kong health professionals, greater presence of meaning in life was associated with greater self-competence in death work (Chan et al., 2015). There is also some support for the association between death competence and health professional quality of life (Sansó et al., 2015). Nonetheless, much remains to be discovered regarding the relationship between these life-related factors and perceived death competence and its effect on individual and community behavior and capabilities.

Online technologies provide growing opportunities for opening up dialog about death. With this in mind, we developed Dying2Learn (Rawlings et al., 2017), a Massive-Open-Online-Course (MOOC), which aimed to provide a community platform for social discussion and connection regarding death, dying, and palliative care for the Australian public. The MOOC provided a rich environment to understand contemporary views and perspectives about death and dying and for identifying factors associated with various attitudes toward death such as death competence.

The purpose of this cross-sectional study was to develop an understanding of factors associated with perceived death competence. Specifically, in people who enrolled in a MOOC on death and dying, we aimed to determine whether meaning in life, quality of life, and sociodemographic characteristics (gender, age, occupation, education, death and caring experience, religiousness, spirituality, and location) were significantly associated with perceived death competence, and which factors had the strongest predictive ability. Given the limited existing research on predictors of death competence, no directional hypotheses were made for this exploratory study.

Method

The study methodology is described in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology statement (Vandenbroucke et al., 2007).

Participants and procedure

Participants for this cross-sectional study were recruited from the Dying2Learn MOOC during course enrollment in June 2016. Details about the six-week interactive online course created by CareSearch (www.caresearch.com.au) are provided elsewhere (Miller-Lewis et al., 2018; Rawlings et al., 2017; Tieman et al., 2018). The MOOC was freely available through the OpenLearning platform. Students completed questions regarding their sociodemographic background and death attitudes at enrollment. Overall, 1,069 of the 1,156 MOOC enrollees were invited to participate in this optional research study (late enrollees were excluded because of having immediate access to course content). MOOC enrollees were sent study information and an invitation including a unique web link to an online survey via e-mail. This study was approved by Flinders University Social and Behavioral Research Ethics Committee (Project No. 7247). Data were deidentified following data-matching from the data sources and before data analyses.

Overall, 312 (29.2%) MOOC enrollees agreed to participate in the research study, and 277 provided complete responses on the measure of death competence (25.9% response rate). Based on enrollment records, the sociodemographic profile of the participants recruited for the research study was very similar to nonparticipating MOOC enrollees, with the exception of research study participants being significantly older (t [$df = 1{,}146$] $= -5.42$, $p < 0.0005$) than those not participating ($M = 53$ vs. $M = 48$ years). Research study participants also subsequently completed a greater percentage of the MOOC ($M = 45.92$ [$SD = 31.86$] vs. $M = 23.61$ [$SD = 29.33$], t [$df = 433.4$] $= -10.35$, $p < 0.0005$). Table 1 provides demographic information about the 277 research study participants. At enrollment, the mean age was 52.9 years ($SD = 12.4$, range = 19–84 years), and the vast majority were female (95.6%). The education level was high, with 70.4% having university education, and 64.3% identified themselves as a health professional.

Measures

Table 1 also outlines the survey measures used in the current study and their descriptive statistics (including internal consistency

Table 1. Description of measures used in study and their descriptive statistics

Measure	Measure source	Measure description	Variable derived	% or *M* (*SD*)	Alpha
Death Competence	Bugen's CDS (Bugen, 1981; Robbins, 1991a, 1994)	CDS measures a range of human skills and coping-based capabilities in dealing with death (Robbins, 1994). The self-report questionnaire contains 30 statements, including items related to one's self (e.g., "I can talk about my death with family and friends") and to others (e.g., "I can communicate with the dying"). Respondents report their extent of agreement with each statement using a 7-point Likert scale from "do not agree at all" to "agree completely."	The total death competence score is derived by summing items, with a potential range of 30–210. Higher scores indicate greater death competence skills. The CDS has evidence of construct validity in distinguishing hospice volunteers from others, the expected negative associations with death anxiety scales, and the ability to predict death preparation behaviors. Strong internal consistency has been demonstrated (in this and other studies), but the factor structure of the scale in English is untested (Bugen, 1981; Camarneiro & Gomes, 2015; Neimeyer et al., 2003; Robbins, 1991a, 1994).	155.03 (27.39)	.94
Presence of Meaning in Life	MLQ (Steger, 2010; Steger et al., 2006) Presence Subscale	MLQ uses 5 items to assess the "Presence of Meaning," how full respondents feel their lives are of meaning (e.g., "I have a good sense of what makes my life meaningful"). Each item is rated on a 7-point Likert scale from "absolutely untrue" to "absolutely true."	The 5 items are summed to create a total subscale score (possible range 5–35). Higher scores indicate greater presence of meaning in life. The MLQ subscales have established internal consistency and stable factor structure, and construct validity has been demonstrated by expected associations with related well-being variables (Steger, 2010; Steger et al., 2006, 2008, 2009).	27.37 (5.10)	.88
Search for Meaning in Life	MLQ (Steger, 2010; Steger et al., 2006) Search Subscale	MLQ uses 5 items to assess the Search for Meaning, how motivated respondents are to find or deepen meaning in their life (e.g., "I am searching for meaning in my life"). Each item is rated on a 7-point Likert scale from "absolutely untrue" to "absolutely true."	The 5 items are summed to create a total subscale score (possible range 5–35). Higher scores indicate greater search for life meaning. The MLQ subscales have established internal consistency, stable factor structure, and demonstrated construct validity (Steger, 2010; Steger et al., 2006, 2008, 2009).	20.27 (7.75)	.91
Health-Related Quality of Life (Global)	AQoL-4D instrument (AQoL, 2014; Hawthorne et al., 2013)	The AQoL-4D is a multiattribute survey of health-related quality of life. It contains 12 questions about quality of life in relation to the areas of independent living, mental health, relationships, and senses. Questions are answered on 4-point ordinal scales.	A combined global index of health-related quality of life represents the AQoL Total Utility Score, based on all 12 survey items. Using weighted algorithms based on Australian general population norms (Hawthorne et al., 2013), utilities can be assigned to scores and can range from −0.04 "worse than death" to 1.00 "optimal health" (per 2015 utility algorithm syntax) (AQoL, 2015). Extensive evidence exists regarding the reliability and validity of the AQoL-4D instrument (Hawthorne et al., 1999, 2000, 2001, 2013; Osborne et al., 2003). The total utility score had adequate internal consistency in our study.	0.79 (0.17)	.66
Health-Related Quality of Life: Independent Living	AQoL-4D instrument (AQoL, 2014; Hawthorne et al., 2013)	Three questions of the AQoL-4D assess the health-related quality of life dimension of independent living, which are answered on 4-point ordinal scales.	A total score on AQoL Independent Living dimension was derived by combining responses to the three questions using the 2015 weighted utility algorithm (AQoL, 2015; Hawthorne et al., 2013), with higher scores representing greater capacity for independent living. Questionable internal consistency was found for this subscale in our study.*	0.98 (0.08)	.53

(*Continued*)

Table 1. (*Continued.*)

Measure	Measure source	Measure description	Variable derived	% or *M* (*SD*)	Alpha
Health-Related Quality of Life: Relationships	AQoL-4D (AQoL, 2014; Hawthorne et al., 2013)	Three questions of the AQoL-4D assess the health-related quality of life dimension of relationships, which are answered on 4-point ordinal scales.	A total score on AQoL Relationships dimension was derived by combining responses to the three questions using the 2015 weighted utility algorithm (AQoL, 2015; Hawthorne et al., 2013), with higher scores representing more optimal relationships. Questionable internal consistency was found for this subscale in our study.[*]	0.91 (0.12)	.51
Health-Related Quality of Life: Senses	AQoL-4D instrument (AQoL, 2014; Hawthorne et al., 2013)	Three questions of the AQoL-4D assess the health-related quality of life dimension of senses, which are answered on 4-point ordinal scales.	A total score on AQoL Senses dimension was derived by combining responses to the three questions using the 2015 weighted utility algorithm (AQoL, 2015; Hawthorne et al., 2013), with higher scores representing more optimal senses. Low internal consistency was found for this subscale in our study.[*]	0.95 (0.06)	.36
Health-Related Quality of Life: Mental Health	AQoL-4D instrument (AQoL, 2014; Hawthorne et al., 2013)	Three questions of the AQoL-4D assess the health-related quality of life dimension of mental health, which are answered on 4-point ordinal scales.	A total score on AQoL Mental Health dimension was derived by combining responses to the three questions using the 2015 weighted utility algorithm (AQoL, 2015; Hawthorne et al., 2013), with higher scores representing more optimal mental health. Questionable internal consistency was found for this subscale in our study.[*]	0.91 (0.08)	.48
Self-Assessed Health	ABS National Health Survey question (ABS, 2015c)	Self-assessed health status was measured with the widely used ABS National Health Survey question: "In general, would you say your health is: excellent/very-good/good/fair/poor" (ABS, 2015c).	On self-assessed health status, scores range from 1 to 5, with higher scores indicating poorer health.	2.23 (0.81)	NA
Religiousness	Fetzer Brief Multi-dimensional Measure of Religiousness and Spirituality (John E. Fetzer Institute and National Institute on Aging Working Group, 2003)	Participants reported the extent to which they consider themselves to be "a religious person" on a 4-point Likert scale from "not religious at all" through to "very religious."	Scores on this item ranged from 1 to 4, with higher scores indicating greater religiousness.	1.84 (0.90)	NA
Spirituality	Fetzer Brief Multi-dimensional Measure of Religiousness and Spirituality (John E. Fetzer Institute and National Institute on Aging Working Group, 2003)	Participants reported the extent to which they consider themselves to be 'a spiritual person' on a 4-point Likert scale from 'not spiritual at all' through to 'very spiritual'.	Scores on this item ranged from 1 to 4 with higher scores indicating greater spirituality.	2.90 (0.89)	NA
Age	Enrollment records	Age in years	Age in years as reported by participants, which ranged from 19 to 84 in this sample.[†]	52.93 (12.44)	NA
SEIFA postal area disadvantage	ABS (2013) Index of Relative Socio-Economic Disadvantage	Residential postal code was recorded if participants lived in Australia or the name of their country if located outside Australia. Australian postal codes were assigned scores on SEIFA Index of Relative Socio-Economic Disadvantage (ABS, 2013), which ranks postal areas according to economic and social conditions of households within each area.	Participants reporting an Australian postal code were assigned a SEIFA Index of Relative Socio-Economic Disadvantage (ABS, 2013) score corresponding to their postal code. Low scores indicate greater area disadvantage.[‡]	1010.6 (58.3)	NA

(*Continued*)

Table 1. (*Continued.*)

Measure	Measure source	Measure description	Variable derived	% or *M* (*SD*)	Alpha
Education level	ABS census question (ABS, 2015a, 2015b)	Participants reported their highest level of completed education according to four ordinal categories (some high school, completed high school, trade school/equivalent, and university studies) adapted from the ABS 2016 census.	Scores could range from 0 to 3, with higher scores indicating a greater level of completed education.	2.55 (0.80)	NA
Health professional (yes)	Enrollment records	Participants were asked to identify their occupation as either a health professional or not a health professional.	The dichotomized responses enabled comparison of participants who self-identified as a health professional to participants who self-identified as not being a health professional.	64.3%	NA
Death experience (yes)	Study derived	Participants were asked “has someone close to you died in the last five years?” and responded with yes, no, or not sure.	Responses were dichotomized to compare participants who had experienced the death of someone close to them in the past 5 years with other participants.	68.2%	NA
Carer experience (yes)	Study derived	Participants were asked “have you cared for, or are you caring for someone who has a terminal illness?” and responded with yes, no, or not sure.	Responses were dichotomized to compare participants who had experience caring for someone with a terminal illness with other participants.	69.6%	NA
Gender (female)	Enrollment records	Participants were asked to report the gender they identify with.	Responses were dichotomized to compare females with other participants.	95.6%	NA
Resides in Australia (yes)	Enrollment records	Participants’ country location was recorded automatically during the enrolment process on the MOOC platform.	Country locations were dichotomized to compare participants residing in Australia with participants residing in other countries.	93.1%	NA
Australian-born (yes)	ABS census question (ABS, 2015a, 2015b)	Using the ABS census question, participants selected the name of the country they were born in.	Responses were dichotomized to compare participants born in Australia with participants born in other countries.	67.9%	NA

ABS, Australian Bureau of Statistics; AQoL, Assessment of Quality of Life; CDS, Coping with Death Scale; *M*, mean; MLQ, Meaning in Life Questionnaire; MOOC, Massive-Open-Online-Course; NA, not available; *SD*, standard deviation; SEIFA, Socio-Economic Index for Areas.

*In our study, the AQoL-4D, the 4-subscale dimension scores showed low internal consistency, perhaps indicative of these subscales only being derived from 3 items each. The AQoL subscales distributions also deviated from normality by showing negative skew and kurtosis, and therefore should be interpreted with some caution. Strong positive correlations between AQoL subscales and the total utility score were indicative of potential multicollinearity (Table 2). Regression analyses confirmed the presence multicollinearity between the total score and subscale scores on the AQoL, so the subscales were eliminated from further analysis.

[†] One participant was missing data on age; therefore, analyses with this variable include $n = 276$.

[‡] SEIFA scores are only generated for participants residing in Australia with an Australian postal code, $n = 257$ of the 277 complete cases.

where applicable). Sociodemographic information was measured with questions adapted from the Australian Bureau of Statistics (2013, 2015a, 2015b, 2015c) where possible. Questions regarding religiousness and spirituality (John E. Fetzer Institute and National Institute on Aging Working Group, 2003), and death and caring experiences were also queried. Death competence was measured with Bugen's Coping with Death Scale (Bugen, 1981; Camarneiro & Gomes, 2015; Neimeyer et al., 2003; Robbins, 1991a, 1994). Health-Related Quality of Life was measured with the Assessment of Quality of Life (AQoL) 4D instrument (Assessment of Quality of Life, 2014, 2015; Hawthorne et al., 1999, 2000, 2001, 2013; Osborne et al., 2003, 2013), and meaning in life was measured with the Meaning In Life Questionnaire (Steger, 2010; Steger et al., 2006, 2008, 2009).

Statistical approach

Given the exploratory nature of this cross-sectional study and the adequate sample size, missing data were not imputed to increase statistical power. A statistical significance level of $p < 0.05$ was used, and effect sizes were interpreted based on standard recommendations (Cohen, 1988; Fergusson, 2009). Descriptive statistics were produced for each variable. Tests for normality revealed scores on the death-competence scale were slightly negatively skewed, but did not deviate greatly from normality (Pallant, 2010) (Kolmogorov-Smirnov test = 0.077). The study variables generally did not show substantial deviation from normality based on skewness, kurtosis, or histogram examination. The direction and strength of bivariate associations between study variables were examined using Pearson's correlation coefficients, with focus placed on associations with death-competence scores as the outcome of interest. Following this, multiple linear regressions predicting scores on death competence from the group of predictor variables were conducted, enabling the identification of the variable with the strongest unique association with death-competence scores, as well as total variance in death-competence explained by the combined group of predictor variables. Data analyses were conducted in IBM-SPSS, version 23.

Results

Descriptive statistics

Descriptive statistics describing the 277 study participants are provided in the final two columns of Table 1. The majority (93.1%) of participants resided in Australia, and on average lived in areas slightly above the socioeconomic national average. Participants were more likely to identify themselves as being spiritual rather than religious, and on average considered themselves to be in good to very good health. Overall, 64% had experienced the death of a loved one in the past 5 years. Seventy percent had cared for someone terminally ill, likely indicative of the considerable number of health professionals in the sample. Scores on the presence and search for meaning in life were similar to those found in people aged 65+ (Steger et al., 2009), and suggested our participants feel satisfied that they've grasped what makes life meaningful, why they're here, and what they want to do with life (Steger, 2010). Scores on quality of life were indicative of being in very good health and similar to those found in the general Australian population (Hawthorne et al., 2013). The mean score on death competence was 155.0, higher than previously found in school parents ($M = 125$) (Siracusa et al., 2011), nonpatient care volunteer groups ($M = 151.5$) and palliative care volunteers pretraining ($M = 143.5$) (Robbins, 1994), and closer to means found in hospice volunteers in training ($M = 154.8$) (Claxton-Oldfield et al., 2007).

Bivariate analyses

A correlation matrix of bivariate associations between variables is shown in Table 2. Presence of meaning in life held the strongest bivariate association with death competence, with higher levels of presence of meaning in life significantly positively associated with greater death-competence scores and indicating a moderate effect size of practical significance. Conversely, higher levels of searching for meaning in life held a small, significant, negative association with lower death-competence scores. Greater age, religiousness, spirituality, total quality of life (and especially its Relationships subscale) held significant positive associations with greater death-competence scores, indicative of small effect sizes. Better self-assessed health was also associated with greater death-competence scores. Having experience of death was significantly associated with higher death-competence scores, as was carer experience. There was no significant relationship with death-competence scores for gender, residing in Australia, birthplace, socioeconomic-disadvantage, education level, or health professional status. Significant intercorrelations between the study predictor variables were not unexpected. Particularly of note was the significant moderate positive association between the presence of meaning in life and the AQoL relationships subscale and total score, and negative associations between the AQoL scores and self-assessed health.

Multivariable analyses

A multiple linear regression was used to assess the ability of the group of sociodemographic and meaning-in-life and quality-of-life variables to predict scores on death competence (Table 3). In the final model, a total of 34.4% of the variance in death-competence scores was accounted for by the group of variables (F [14,261] = 9.76, $p < 0.005$). After adjusting for all other variables in the model, greater presence of meaning in life, total quality of life, age, death experience, and carer experience were each statistically significant unique predictors of death-competence scores, with generally small effect sizes. The presence of meaning in life obtained the highest beta value ($\beta = 0.350$, $p < 0.0005$), indicating a moderate effect size. The remaining variables did not hold unique associations with death competence after controlling for the effects of all other variables in the model. The bivariate associations of religiousness and spirituality with death competence were no longer significant in the multivariable model.

A multiple linear regression with Australian residents only allowed the assessment of the unique association of socioeconomic disadvantage to death competence, and an opportunity to investigate potential differences between people in and outside of Australia on predictors of death competence. This model accounted for 33.8% of the variance in death competence (F [14,241] = 8.80, $p < 0.0005$). The significant unique predictors for people residing in Australia were the same as those found for all participants, and there was no significant association between socioeconomic-disadvantage and death competence.

Table 2. Bivariate correlations between variables ($n = 277$)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1) Death Competence	1																		
2) Presence of Meaning in Life	.457***	1																	
3) Search for Meaning in Life	−.146*	−.339***	1																
4) AQoL Total Utility Score	.206***	.343***	−.223***	1															
5) AQoL Independent Living	.029	.131*	−.028	.537***	1														
6) AQoL Relationships	.382***	.421***	−.305***	.786***	.317***	1													
7) AQoL Senses	.011	−.023	.043	.537***	.141*	.265***	1												
8) AQoL Mental Health	.010	.250***	−.179**	.697***	.186**	.318***	.183**	1											
9) Self-Assessed Health[§]	−.138*	−.285***	.121*	−.475***	−.328***	−.309***	−.159**	−.435***	1										
10) Religiosity	.120*	.174**	−.009	−.039	.014	−.022	−.045	−.035	.011	1									
11) Spirituality	.247***	.263***	.102	−.004	−.024	.005	−.027	−.010	−.058	.387***	1								
12) Age[‖]	.285***	.195***	−.206***	−.094	−.177**	.055	−.149*	−.069	.061	.157**	.172**	1							
13) SEIFA area disadvantage[¶]	−.023	−.046	.150*	.088	.068	.026	.032	.108	−.127*	.011	.077	.031	1						
14) Education level	.019	.095	.002	.095	−.014	.037	.041	.145*	−.135*	−.039	.104	.014	.096	1					
15) Health professional (yes)	−.037	.009	.010	.106	.167**	.050	.031	.084	−.150*	.019	−.017	−.330***	−.085	.050	1				
16) Death experience (yes)	.232***	.134*	−.043	−.079	.071	.031	−.137*	−.156**	.070	.095	.080	.049	−.016	−.026	.041	1			
17) Carer experience (yes)	.238***	.110	.022	−.074	.028	.002	−.058	−.117*	−.018	.114	.125*	.082	−.067	−.110	.226***	.173**	1		
18) Gender (female)	−.039	.000	.049	.048	.008	.038	.053	.007	−.025	−.061	−.011	−.121*	.016	.054	.106	−.036	.066	1	
19) Resides in Australia (yes)	−.075	−.039	.008	.034	.081	.004	.041	−.026	.007	−.064	−.047	.047	[¶]	−.100	.066	−.062	−.122*	−.067	1
20) Australian-born (yes)	−.028	−.102	.003	−.049	.067	−.038	−.027	−.084	.101	−.027	−.061	−.137*	.042	−.089	.035	.078	−.082	.028	.364***

To allow comparison of magnitude across all variables, associations were analyzed using Pearson correlations. Associations between death competence and the dichotomous demographic variables were also analyzed using Independent samples t-test (not shown), and the conclusions were the same.

AQoL, Assessment of Quality of Life; SEIFA, Socio-Economic Index for Areas.

*$p < .05$ two-tailed significance.

**$p < .01$ two-tailed significance.

***$p < .001$ two-tailed significance.

[§] On self-assessed health status, higher scores indicate poorer health.

[‖] One participant was missing data on age, therefore analyses with this variable include $n = 276$.

[¶] SEIFA scores are only generated for participants residing in Australia with an Australian postal code, $n = 257$ of the 277 complete cases.

Table 3. Simultaneous multiple linear regressions predicting death competence

	Death competence			
Predictor variables*	Unstandardized B	B $CI_{95\%}$	Standardized β	*p*
Final Model 1 (*n* = 276 all cases)[†]				
Presence of Meaning in Life	1.87	1.22 to 2.57	.350	0.0001
Search for Meaning in Life	0.203	−0.19 to 0.60	.058	0.311
AQoL Total Utility Score	23.77	4.13 to 43.41	.145	0.018
Self-Assessed Health Status[‡]	−0.30	−4.17 to 3.58	−.009	0.881
Religiosity	−1.13	−4.42 to 2.16	−.037	0.501
Spirituality	2.77	−0.74 to 6.28	.090	0.122
Age	0.46	0.21 to 0.72	.212	0.0001
Highest level of education	−0.54	−4.03 to 2.95	−.016	0.761
Health professional (yes)	−1.79	−8.13 to 4.54	−.032	0.578
Death experience (yes)	9.23	3.22 to 15.24	.158	0.003
Carer experience (yes)	8.74	2.39 to 15.08	.149	0.007
Gender (female)	−3.34	−15.05 to 8.37	−.029	0.575
Australian-born (yes)	3.54	−2.87 to 9.94	.061	0.278
Resides in Australia (yes)	−7.31	−19.14 to 4.51	−.068	0.224
Final Model 2 (*n* = 256 Australians with SEIFA data)[§]				
Presence of Meaning in Life	1.79	1.11 to 2.46	.339	0.0001
Search for Meaning in Life	0.26	−0.15 to 0.67	.074	0.217
AQoL Total Utility Score	27.89	7.25 to 48.52	.169	0.008
Self-Assessed Health Status[‡]	−0.30	−4.36 to 3.75	−.009	0.883
Religiosity	−1.01	−4.43 to 2.41	−.034	0.561
Spirituality	2.03	−1.67 to 5.72	.066	0.282
Age	0.49	0.22 to 0.75	.220	0.0001
Highest level of education	−0.23	−3.79 to 3.33	−.007	0.899
Health professional (yes)	−2.05	−8.61 to 4.50	−.036	0.538
Death experience (yes)	9.46	3.22 to 15.70	.164	0.003
Carer experience (yes)	8.80	2.38 to 15.22	.153	0.007
Gender (female)	−3.40	−15.15 to 8.34	−.031	0.569
Australian-born (yes)	3.72	−2.78 to 10.22	.061	0.261
SEIFA Area Disadvantage	−0.02	−0.07 to 0.03	−.039	0.476

$CI_{95\%}$, 95% confidence interval; AQoL, Assessment of Quality of Life; SEIFA, Socio-Economic Index for Areas.

*Collinearity diagnostics indicated the presence of multicollinearity between AQoL subscales and AQoL Total Utility scores; therefore, the reported multivariable analysis excluded the AQoL subscales.

[†] Of the 277 cases with data on death competence, *n* = 1 was missing data on age; therefore, the multiple regression had a total *n* = 276.

[‡] On self-assessed health status, higher scores indicate poorer health.

[§] Valid data on the SEIFA disadvantage index only exist for participants who reside in Australia (*n* = 256). We tested a model including *n* = 256 Australian residents only to assess the association of SEIFA disadvantage to death competence.

Discussion

Main findings

The findings of this exploratory study have highlighted an important association between peoples' feelings about life and about death. A sense of a presence of meaning in life was most strongly related to higher levels of competence in coping with death, even more than having experience with the death of a loved one or caregiver experience. The presence of meaning in life was more important than searching for meaning in life in explaining death-competence scores; with greater searching for meaning in life related to lower death-competence scores in bivariate analyses but not maintained in multivariable analyses. When people feel their life holds meaning, do they feel more comfortable with the idea of their mortality and more competent to deal with death? Or is mortality awareness a necessary precursor for facilitating the pursuit of meaning in life? Can helping people build the presence of meaning in one's life lead to greater death competence? Indeed, the meaning of life and death may be interrelated concepts that shape each other (Cozzolino & Blackie, 2013; Davis et al., 2015; Robbins, 1991a; Taubman-Ben-Ari, 2011). The potential transactional interplay among mortality awareness, meaning in life, and death competence requires longitudinal research to untangle. One possibility is that awareness of our mortality is required for a true sense of meaning in life to develop (Cozzolino & Blackie, 2013), which can in turn lead to the development of competence coping with death.

Our correlational findings within the Australian setting were generally consistent with the limited amount of preexisting research on death competence (Camarneiro & Gomes, 2015; Galiana et al., 2017; Haig, 2014; McNeely, 1998; Reimer, 2007; Robbins, 1991a, 1991b, 1992, 1994; Schmidt-RioValle et al., 2012; Seo et al., 2013; Siracusa et al., 2011), indicating similarities between people residing in Australia and other countries. We found life-related variables more strongly associated with death-competence than sociodemographic variables. Older age (and perhaps the experience that comes with it) was the only demographic variable independently related to greater death competence. The bivariate associations with religiousness and spirituality disappeared once other factors were adjusted for, which may indicate the presence of a mediated effect that could explain some of the mixed findings in previous studies (Haig, 2014; Seo et al., 2013). In addition, we have demonstrated an association between greater health-related quality of life and greater perceived death competence. Results were particularly indicative of a role of quality-of-relationships within quality of life, which needs further investigation with psychometrically strong social support measures. The interplay between these variables as people age and their health deteriorates would be an interesting focus for future longitudinal research.

In our sample, we found that bereavement experience and experience caring for the dying was associated with greater death competence, but there were no differences on death competence between health professionals and the general public. The self-selected nature of the sample already interested in the topic of death (as demonstrated by enrollment in a death course) may have concealed differences in death competence normally expected between health professionals and the general public. Some health professionals may have sought out the course because of limited exposure to caring for the dying or for palliative care learning opportunities, and some participants who didn't identify as health professionals may have had considerable experience in caring for the dying, either within their personal life or through working as death doulas or funeral celebrants, and therefore potentially not truly representative of the general community. Understanding death competence and its explanatory factors in different types of health professionals and community groups with varying levels and types of caring experience (both clinical and personal) is an important avenue for future research (Chan et al., 2015). Investigating the interplay between meaning in life, types of caring experiences, and death competence in these different occupational and community groups is also required. It may be that certain life tasks, such as altruistic service (Cozzolino & Blackie, 2013; Sinclair et al., 2006) or caring for a dying person you know personally (i.e., personal caring rather than professional caring), can induce the development of meaning in life, which in turn can lead to greater death competence.

Clinical implications

As the population ages, knowledge of factors associated with poorer death coping can be useful for identifying who might be a greater risk of distress when they or a loved one is facing death, and might prove useful additions to bereavement risk assessments. Being able to identify people who may struggle more in preparing for death or its aftermath can help health professionals target early intervention efforts toward those likely to be in greatest need. Understanding factors associated with greater death competence in health professionals is also important given that some have regular death exposure and for whom struggles in death competence may lead to burnout and compassion fatigue (Chan et al., 2015; Sansó et al., 2015). Indeed, one study of end-of-life care nurses found greater meaning in life was associated with less emotional exhaustion and a greater sense of accomplishment (Gama, Barbosa, & Vieira, 2014). Screening health professionals or volunteers on meaning in life and death competence might help identify those who may be better suited to palliative-related roles or for whom additional training and support would be beneficial (Claxton-Oldfield & Banzen, 2010; Gama et al., 2014). Interventions focused on increasing meaning in life have shown multiple psychosocial benefits for patients with advanced disease (Guerrero-Torrelles et al., 2017; Vos et al., 2015), community-dwelling older adults (Chippendale & Boltz, 2015) as well as promise with palliative care staff and volunteers (Guerrero-Torrelles et al., 2017; Sinclair et al., 2006; Wasner et al., 2005). There is also suggestions that these interventions may be especially useful for professionals working in palliative care who exhibit lower meaning in life (Fillion et al., 2009).

Limitations and future directions

This exploratory study has provided a beginning basis for understanding correlates of death competence, but must be interpreted with the following limitations in mind. First and foremost, the cross-sectional nature of this correlational study means that we cannot determine possible causal sequences or directions of effects on death competence. Without longitudinal data, we are unable to demonstrate temporal precedence of our predictor variables or examine potential transactional relationships among variables. Future longitudinal research following people over time is important to elucidate whether high presence of meaning in life, quality of life, and death and caregiving experiences temporally precede subsequent death competence. Second, the study sample comprised self-selected individuals who chose to enroll in a course about death, many of whom were health professionals and/or had experience caring for the dying or bereaved. This preexisting interest in the topic of death possibly skewed death-competence scores toward more adaptive levels than what might be seen in a representative sample of the general public. Third, a deeper investigation of death-competence levels held by people with different health professional and carer roles is warranted. To fully articulate the community versus health professional perspectives, clarification on various occupational roles and experience caring within a clinical or personal context is required. Future research could determine if health professionals working in palliative care have higher levels of death competence than other health professionals or people involved in death-related work (e.g., death doulas, funeral industry, volunteers). Finally, using the Coping with Death Scale (Bugen, 1981; Robbins, 1994) allowed for a larger sample size, but relied on self-reported subjective perceptions of "likely" behaviors rather than objective behavioral observation, which may have provided a different picture.

Conclusions

In conclusion, the findings of this study suggest that our attitudes toward life and death are inextricably linked. What role adaptive attitudes toward meaning in life can potentially have on bolstering subsequent adaptive coping and competence regarding death needs further exploration in longitudinal studies including both health professionals and the general community. Future research is also needed to extrapolate the influence of certain life tasks or experiences, such as caring for a dying person, on the development of both meaning in life and competence coping with death.

Author ORCIDs. Lauren Miller-Lewis 0000-0001-6013-130X, Jennifer Tieman 0000-0002-2611-1900, Christine Sanderson 0000-0001-5423-5778

Acknowledgments. The Dying2Learn MOOC is part of CareSearch, which is funded by the Australian Government Department of Health. The funding body had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

The authors thank the study participants and the many people who contributed their time and expertise to the CareSearch project, including members of the National Advisory Group. The authors also thank OpenLearning for their contributions, including providing the MOOC platform and assisting with data extraction.

References

Assessment of Quality of Life (2014) AQoL-4D Publication table. Available from http://www.aqol.com.au/index.php/aqol-publications#4D.

Assessment of Quality of Life (2015) SPSS algorithm for AQoL-4D utility model - CHE version 8. Available from http://www.aqol.com.au/documents/AQoL-4D/v8_SPSS_algorithm_AQOL4D_150415.sps.

Australian Bureau of Statistics (2013) Technical Paper. Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 2011. Available from http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/22CEDA8038AF7A0DCA257B3B00116E34/$File/2033.0.55.001%20seifa%202011%20technical%20paper.pdf.

Australian Bureau of Statistics (2015a) National Health Survey 2014-15 Questionnaire. ABS Cat. 4364.0.55.001. Available from http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/EFC93ECE5ABE3894CA257F1400133CE1/$File/national%20health%20survey%202014-15%20questionnaire.pdf.

Australian Bureau of Statistics (2015b) Census of Population and Housing: Nature and Content, Australia, 2016. ABS Catalogue No. 2008. Available from http://www.abs.gov.au/AUSSTATS/abs@.nsf/productsbyCatalogue/985591E380E97BE1CA257673001C8201?OpenDocument.

Australian Bureau of Statistics (2015c) National Health Survey: First Results, Australia, 2014-15. ABS Catalogue No. 4364.0.55.001. Available from http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/CDA852A349B4CEE6CA257F150009FC53/$File/national%20health%20survey%20first%20results,%202014-15.pdf.

Bath DM (2010) Separation from loved ones in the fear of death. *Death Studies* **34**(5), 404–425. doi:10.1080/07481181003697639

Bugen LA (1981) Coping: Effects of death education. *OMEGA - Journal of Death and Dying* **11**(2), 175–183. doi:10.2190/jqpa-qfhw-vq7a-mcak

Camarneiro APF and Gomes SMR (2015) Translation and validation of the coping with death scale: A study with nurses. *Journal of Nursing Referência* **4**(7), 113–121.

Chan WCH, Tin AF, and Wong KL Y (2015) Coping with existential and emotional challenges: Development and validation of the self-competence in Death Work Scale. *Journal of Pain and Symptom Management* **50**(1), 99–107. doi:10.1016/j.jpainsymman.2015.02.012

Chippendale T and Boltz M (2015) Living legends: Effectiveness of a program to enhance sense of purpose and meaning in life among community-dwelling older adults. *American Journal of Occupational Therapy* **69**(4), 1–11. doi:10.5014/ajot.2015.014894

Claxton-Oldfield S and Banzen Y (2010) Personality characteristics of hospice palliative care volunteers: The "Big Five" and empathy. *American Journal of Hospice and Palliative Medicine* **27**(6), 407–412. doi:10.1177/1049909110364017

Claxton-Oldfield S, Crain M, and Claxton-Oldfield J (2007) Death anxiety and death competency: The impact of a palliative care volunteer training program. *American Journal of Hospice and Palliative Medicine* **23**(6), 464–468. doi:10.1177/1049909106294882

Cohen J (1988). *Statistical power analysis for the behavioral sciences.* Mahwah, NJ: Lawrence Erlbaum.

Collins A, McLachlan SA, and Philip J (2017) Initial perceptions of palliative care: An exploratory qualitative study of patients with advanced cancer and their family caregivers. *Palliative Medicine* **31**(9), 825–832. doi:10.1177/0269216317696420

Cox K, Bird L, Arthur A, *et al.* (2013) Public attitudes to death and dying in the UK: A review of published literature. *BMJ Supportive and Palliative Care* **3**(1), 37–45. doi:10.1136/bmjspcare-2012-000203

Cozzolino P J and Blackie LER (2013) I die, therefore I am: The pursuit of meaning in the light of death. In *The experience of meaning in life: Classical perspectives, emerging themes, and controversies.* JA Hicks and C Routledge (eds.), pp. 31–45. Dordrecht: Springer.

Davis EL, Deane FP, and Lyons GC (2016) Prediction of individual differences in adjustment to loss: Acceptance and valued-living as critical appraisal and coping strengths. *Death Studies* **40**(4), 211–222.

Davis EL, Deane FP, and Lyons GCB (2015) Acceptance and valued living as critical appraisal and coping strengths for caregivers dealing with terminal illness and bereavement. *Palliative and Supportive Care* **13**(2), 359–368. doi: http://dx.doi.org/10.1017/S1478951514000431

Doka KJ (2015) Hannelore Wass: Death education--An enduring legacy. *Death Studies* **39**(9), 545–548. doi:10.1080/07481187.2015.1079452

Durlak JA (1972) Relationship between individual attitudes toward life and death. *Journal of Consulting and Clinical Psychology* **38**(3), 463.

Fergusson CJ (2009) An effect size primer: A guide for clinicians and researchers. *Professional Psychology: Research and Practice* **40**(5), 532–538.

Fillion L, Duval S, Dumont S, *et al.* (2009) Impact of a meaning-centered intervention on job satisfaction and on quality of life among palliative care nurses. *Psychooncology* **18**(12), 1300–1310. doi:10.1002/pon.1513

Frankl VE (2011) *Man's search for ultimate meaning.* London: Rider.

Galiana L, Oliver A, Sansó N, *et al.* (2017) Confirmatory validation of the Coping with Death Scale in palliative care professionals. *Medicina Paliativa* **24**(3), 126–135. doi:10.1016/j.medipa.2015.04.001

Gama G, Barbosa F, and Vieira M (2014) Personal determinants of nurses' burnout in end of life care. *European Journal of Oncology Nursing* **18**(5), 527–533. doi:10.1016/j.ejon.2014.04.005

Guerrero-Torrelles M, Monforte-Royo C, Rodriguez-Prat A, *et al.* (2017) Understanding meaning in life interventions in patients with advanced disease: A systematic review and realist synthesis. *Palliative Medicine* **31**(9), 798–813. doi:10.1177/0269216316685235

Hack TF, McClement SE, Chochinov HM, *et al.* (2010) Learning from dying patients during their final days: Life reflections gleaned from dignity therapy. *Palliative Medicine* **24**(7), 715–723. doi:10.1177/0269216310373164

Haig VL (2014). *Spirituality and clinicians' comfort with grief and loss issues.* Doctoral thesis. Chicago: UMI Dissertation Publishing.

Halliday LE and Boughton M (2008) The moderating effect of death experience on death anxiety: Implications for nursing education. *Journal of Hospice & Palliative Nursing* **10**(2), 76–82.

Hawthorne G, Korn S, and Richardson J (2013) Population norms for the AQoL derived from the 2007 Australian National Survey of Mental Health and Wellbeing. *Australian and New Zealand Journal of Public Health* **37**(1), 7–16. doi:10.1111/1753-6405.12004

Hawthorne G, Richardson J, Day N, *et al.* (2000) Construction and utility scaling of the Assessment of Quality of Life (AQoL) instrument. Working Paper 101. Available from Melbourne, Monash University Centre for Health Program Evaluation: http://www.aqol.com.au/papers/workingpaper101.pdf.

Hawthorne G, Richardson J, Day NA (2001) A comparison of the Assessment of Quality of Life (AQoL) with four other generic utility instruments. *Annals of Medicine* **33**(5), 358–370.

Hawthorne G, Richardson J, and Osborne R (1999) The Assessment of Quality of Life (AQoL) instrument: A psychometric measure of Health-Related Quality of Life. *Quality of Life Research* **8**(3), 209–224. doi:10.1023/a:1008815005736

John E. Fetzer Institute and National Institute on Aging Working Group (2003) Multidimensional measurement of religiousness/spirituality for use in health research: A Report of a National Working Group supported by the Fetzer Institute in Collaboration with the National Institute on Aging. Available from Kalamazoo https://www.gem-beta.org/public/DownloadMeasure.aspx?mid=1155.

Kellehear A (2015) Death education as a public health issue. In *Death, dying and bereavement: Contemporary perspectives, institutions and practices*, pp. 221–232. J Stillion and T Attig (Eds.). New York: Springer.

Kim S and Hwang WJ (2014) Palliative care for those with heart failure: Nurses' knowledge, attitude, and preparedness to practice. *European Journal of Cardiovascular Nursing* **13**(2), 124–133. doi:10.1177/1474515113519521

Kim SY (2015) Effects of death anxiety and meaning of life on somatization of grandparent raising grandchildren. *Journal of Korean Academy of Nursing* **45**(2), 262–270. doi:10.4040/jkan.2015.45.2.262

McNeely SA (1998) *Stress and death attitudes in nurses.*Doctoral thesis. Leicester: UMI Dissertation Publishing, University of Leicester.

Meyersburg CA and McNally RJ (2011) Reduced death distress and greater meaning in life among individuals reporting past life memory. *Personality and Individual Differences* **50**(8), 1218–1221. doi:10.1016/j.paid.2011.02.012

Miller-Lewis L, Tieman J, Rawlings D, *et al.* (2018) Can exposure to online conversations about death and dying influence death competence? An exploratory study within an Australian massive open online course. *OMEGA - Journal of Death and Dying.* Epub ahead of print March 26, 2018. doi:10.1177/0030222818765813

Neimeyer RA, Moser RP, and Wittkowski J (2003) Assessing attitudes toward dying and death: Psychometric considerations. *OMEGA - Journal of Death and Dying* **47**(1), 45–76.

Osborne RH, Hawthorne G, Lew EA, *et al.* (2003) Quality of life assessment in the community-dwelling elderly: Validation of the Assessment of Quality of Life (AQoL) Instrument and comparison with the SF-36. *Journal of Clinical Epidemiology* **56**(2), 138–147.

Pallant J (2010) *SPSS survival manual.* Berkshire: McGraw Hill.

Peters L, Cant R, Payne S, *et al.* (2013) Emergency and palliative care nurses' levels of anxiety about death and coping with death: A questionnaire survey. *Australasian Emergency Nursing Journal* **16**(4), 152–159. doi:10.1016/j.aenj.2013.08.001

Rawlings D, Miller-Lewis L, Collien D, *et al.* (2017) Lessons learned from the Dying2Learn MOOC: Pedagogy, platforms and partnerships. *Education Sciences* **7**(3), 67.

Reimer SE (2007) *A test of a model of positive and negative death attitudes among family caregivers of the elderly.* Doctoral thesis. Ohio: Ohio State University.

Robbins RA (1991a) Bugen's Coping with Death Scale: Reliability and further validation. *OMEGA - Journal of Death and Dying* **22**(4), 287–299. doi:10.2190/hntd-rwrw-y3yn-vwx1

Robbins RA (1991b) Death anxiety, death competency and self-actualization in hospice volunteers. *The Hospice Journal* **7**(4), 29–35.

Robbins RA (1992) Death competency: A study of hospice volunteers. *Death Studies* **16**(6), 557–569. doi:10.1080/07481189208252598

Robbins RA (1994) Death competency: Bugen's coping with death scale and self efficacy. In *Death anxiety handbook: Research, instrumentation, and application*, pp. 149–165. RA Neimeyer (ed.). Washington, DC: Taylor and Francis.

Sansó N, Galiana L, Oliver A, *et al.* (2015) Palliative care professionals' inner life: Exploring the relationships among awareness, self-care, and compassion satisfaction and fatigue, burnout, and coping with death. *Journal of Pain and Symptom Management* **50**(2), 200–207. doi:10.1016/j.jpainsymman.2015.02.013

Schmidt-RioValle J, Montoya-Juarez R, Campos-Calderon CP, *et al.* (2012) The effects of a training program on coping with death in palliative care. *Medicina Paliativa* **19**(3), 113–120. doi:10.1016/j.medipa.2010.11.001

Seo MJ, Kim JY, Kim S, *et al.* (2013) Nurses attitudes toward death, coping with death and understanding and performance regarding EOL care: Focus on nurses at ED, ICU and oncology department. *Korean Journal of Hospice and Palliative Care* **16**(2), 108–117.

Sinclair S, Raffin S, Pereira J, *et al.* (2006) Collective soul: The spirituality of an interdisciplinary palliative care team. *Palliative and Supportive Care* **4**(1), 13–24.

Siracusa F, Cruz-Quintana F, Pérez-Marfil MN, *et al.* (2011) Attitudes and coping with death in parents of primary schoolchildren. *Behavioral Psychology/Psicologia Conductual* **19**(3), 627–642.

Steger MF (2010) The Meaning in Life Questionnaire (MLQ). Available from http://www.michaelfsteger.com/wp-content/uploads/2013/12/MLQ-description-scoring-and-feedback-packet.pdf.

Steger MF, Frazier P, Oishi S, *et al.* (2006) The meaning in life questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology* **53**, 80–93.

Steger MF, Kawabata Y, Shimai S, *et al.* (2008) The meaningful life in Japan and the United States: Levels and correlates of meaning in life. *Journal of Research in Personality* **42**(3), 660–678. doi:10.1016/j.jrp.2007.09.003

Steger MF, Oishi S, and Kashdan TB (2009) Meaning in life across the life span: Levels and correlates of meaning in life from emerging adulthood to older adulthood. *Journal of Positive Psychology* **4**(1), 43–52. doi:10.1080/17439760802303127

Taubman-Ben-Ari O (2011) Is the meaning of life also the meaning of death? A terror management perspective reply. *Journal of Happiness Studies* **12**(3), 385–399.

Tieman J, Miller-Lewis L, Rawlings D, *et al.* (2018) The contribution of a MOOC to community discussions around death and dying. *BMC Palliative Care* **17**, 31. doi:10.1186/s12904-018-0287-3

To SM and Chan WCH (2016) Psychometric evaluation of the Chinese version of the Existential Anxiety Questionnaire in a sample of Chinese adolescents living in Hong Kong. *Child and Youth Care Forum* **45**(4), 487–503. doi:10.1007/s10566-016-9347-0

Tranter S, Josland E, and Turner K (2016) Nurses' bereavement needs and attitudes towards patient death: A qualitative descriptive study of nurses in a dialysis unit. *Journal of Renal Care* **42**(2), 101–106. doi:10.1111/jorc.12147

Vandenbroucke JP, von Elm E, Altman DG, *et al.* (2007) Strengthening the Reporting of Observational Studies in Epidemiology (STROBE): Explanation and elaboration. *PLOS Medicine* **4**(10), e297. doi:10.1371/journal.pmed.0040297

Vos J, Craig M, and Cooper M (2015) Existential therapies: A meta-analysis of their effects on psychological outcomes. *Journal of Consulting and Clinical Psychology* **83**(1), 115–128. doi:10.1037/a0037167

Wasner M, Longaker C, Fegg MJ, *et al.* (2005) Effects of spiritual care training for palliative care professionals. *Palliative Medicine* **19**(2), 99–104. doi:10.1191/0269216305pm995oa

Wass H (2004) A perspective on the current state of death education. *Death Studies* **28**(4), 289–308. doi:10.1080/07481180490432315

Yalom I (1980) *Existential psychotherapy.* New York: Basic Books.