Original article

Association between death anxiety and spiritual intelligence with the spiritual health and quality of life in hemodialysis patients

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Abstract

Background and Purpose: Fear of death is commonly experienced by humans and most people prefer not to think about their own mortality. Dialysis patients just as other chronic patients experience a great amount of stress. Use of coping mechanisms and promoting spirituality can help with accepting the inevitable reality and enhancing quality of life. Spiritual attitudes (spiritual intelligence and spiritual health) determine one's manner of dealing with life events, viewpoints, and perceptions of death. In this study, we sought to explore the relationship of spiritual health and intelligence with quality of life and death anxiety.

Methods: In this cross-sectional study, we studied death anxiety, spiritual intelligence, spiritual health, and quality of life in 123 Iranian hemodialysis patients at Imam Reza Hospital, Amol, Iran, during July 2015-January 2016. We also utilized Templer Death Anxiety Scale and King Spiritual Intelligence questionnaire and Paloutzian and Ellison's Spiritual Health questionnaire and McGill Quality of Life questionnaire (MG-QOL). The validity and reliability of the Persian version of the employed questionnaires were assessed by previous studies. The data was analyzed using Pearson correlation coefficient in SPSS, 19 version.

Results: Spiritual health was associated with death anxiety in hemodialysis patients. The linear regression analysis was conducted between the study variables and personal characteristics. There was a significant relationship between gender and death anxiety (*P=0.03*), economic status and death anxiety (*P=0.02*), religious beliefs and spiritual intelligence (*P=0.01*), level of education and quality of life (*P=0.01*), as well as age at diagnosis and spiritual health (*P=0.01*).

Conclusion: This study showed a close relationship between spiritual intelligence and death anxiety and between spiritual health and quality of life in hemodialysis patients. It seems that by enhancing spirituality, internalizing spiritual values and beliefs, and promoting health and spiritual intelligence, death anxiety can be assuaged in hemodialysis patients.

Keywords: Death anxiety, Hemodialysis, Quality of life, Spiritual health, Spiritual intelligence

Introduction

Fear of death is commonly experienced by humans (1) and is a major human concern that has instigated inquiries in various domains over the past centuries (2). Death anxiety surfaces when individuals are faced with life-threatening illnesses or stressors, reminded of death by association with others approaching death or bereavement, and existential confrontation with perceptions of alienation or questions about meaning or purpose in life (3). Anxiety and fear of death are common unpleasant experiences in humans (4), and most people prefer not to think about their own mortality (5). Humans, unlike other creatures, are aware of mortality; this knowledge can cause fear of death and provocation of anxiety depending on the individual's character, coping mechanism, personal circumstances, and environment (6). The

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apprehension engendered by fear of one's own death and/or the process of dying is recognized as an important psychological phenomenon that can affect perceived quality of life in clinical and nonclinical groups (7). Cultural beliefs, attitudes, and social context are factors that may affect conception of death anxiety (8).

Use of coping strategies and high spirituality can aid in accepting the inevitable realities such death (9-12). Spiritual attitudes determine one's coping mechanisms, viewpoints, and perceptions towards death. Further, spiritual health and intelligence raise hope in patients with chronic diseases (11). In other words, patients with low spirituality are more anxious and stressful and would suffer more pain and discomfort due to problems such as pain, low self-confidence, and loneliness (12). Therefore, spiritual health and intelligence are positively associated with mental and physical health (13). In fact, these two factors provide integrated, coordinated communication between internal forces, and by providing stability in life, improve quality of life in patients (14).

Today, governments have taken measures to improve quality of life, which is an integral part of social and economic development (15). Researchers hold that spiritual health and intelligence can help people in daily hardships and reduce worry and anxiety, such as death anxiety. Moreover, it is proposed that spirituality is the foundation of a meaningful and effective life, which can promote quality of life that is known as an important contributor to health (16).

Limited coherent and systematic studies have focused on spiritual intelligence to identify and illustrate its components; therefore, further studies are required on this issue (17). Experiences and reports of death anxiety can vary under the influence of diverse individual, cultural, and social factors (18). Since death anxiety has always existed and is one of the major problems in human societies and fear of sudden death is a common phenomenon in patients with chronic conditions, paying attention to mental aspects of care in chronic patients is of great importance. (19). Moreover, the rate of renal diseases is ever increasing and hemodialysis patients are highly susceptible to death anxiety, and its relationship with quality of life and spiritual intelligence and health is of particular importance in this group of patients. It seems that identifying impediments to mental health, including death anxiety, in hemodialysis patients and approaches to deal with them would be an effective step towards improving every aspect of health (20). Accordingly, in this study we evaluated the effect of spiritual intelligence and health on death anxiety and quality of life in hemodialysis patients.

Materials and Methods

In this cross-sectional study, we enrolled 123 hemodialysis patients referred to hemodialysis center of Imam Reza Hospital in Amol, Iran, during July 2015-January 2016. The exclusion criteria included unwillingness to participate in the study, clinically validated psychiatric disorders, and communication problems (e.g., verbal problems). After the study objective was explained and the subjects were assured of confidentiality of the data, we obtained informed consent from the patients.

The standard sample size was determined based on Morgan's table (α=0.05, SD=3.1, and error rate=0.3).

The data collection tools assessed various domains including demographics, death anxiety, spiritual intelligence, spiritual health, and quality of life. Personal characteristics included age, race, marital status, educational level, and annual household income.

Death anxiety

Death anxiety was measured with the 51-item Templer Death Anxiety Scale (TDAS; Death Anxiety Scale-Extended, 2006), which was used for veterans for the first time in Iran. We used the Persian version of the TDAS consisting of 51 items scored from 1 (*strongly disagree*) to 5 (*strongly agree*), with the minimum and maximum scores ranging from 51 to 225. Lower

scores indicate lower levels of death anxiety. Reliability of this scale was determined using internal consistency and Chronbach's alpha coefficient (α=0.89) and it was calculated to have interclass correlation coefficient (ICC) of 0.91. Furthermore, its validity was established by exploratory factor analysis, principal component analysis, and varimax rotation, such that variance was determined 40.6% with extraction of four factors.

Spiritual intelligence

King Spiritual Intelligence questionnaire (The Spiritual Intelligence Self-Report Inventory: King, 2008; King and DeCicco, 2010) had 24 items rated using a Likert-type scale. Higher scores indicate higher spiritual intelligence and vice versa (minimum score=24 and maximum score=120). Chronbach's alpha coefficient and ICC were calculated at 0.88.

Spiritual health

We also utilized Paloutzian and Ellison's Spiritual Health questionnaire (Paloutzian and Ellison's Spiritual Well-Being Scale, 1982) containing 20 items scored using a 6-point Likert scale (*strongly disagree*=1, *disagree*=2, *somewhat disagree*=3, *somewhat agree*=4, *agree*=5, and *strongly agree*=6). Negative questions were reverse scored. The reliability of the instrument was confirmed by Chronbach's alpha coefficient (α=0.82).

Quality of life

McGill Quality of Life questionnaire (MG-QOL) was used in this study. MG-QOL is a 17-item instrument that measures quality of life using self-report method. The MG-QOL consists of four parts including A) all the physical, emotional, social and financial aspects over the past two days (1 item), B) physical symptoms or problems over the past two days (4 items), C) description of feelings and thoughts over the past two days (12 items), and D) list or description of the things that had the greatest effects on quality of life in the past two days. Each MG-QOL item is scored on a scale of 0 (*worst outcome*) to 10 (*best outcome*) with higher scores reflecting higher levels of quality of life (total score range 0-170). Reliability and validity of the scale were established.

Statistical analysis

The quantitative and qualitative data were described as mean (SD) and frequency (percentage), respectively. Pearson correlation coefficients were calculated to estimate the relationships between different variables (death anxiety, spiritual intelligence, quality of life, and spiritual health).

Multiple linear regression model was used to estimate beta coefficient (β) and 95% confidence intervals (CIs) between the study variable scores (death anxiety, spiritual intelligence, quality of life, and spiritual health) and the personal characteristics, including age, race, marital status, educational level, and annual household income. Stata software, version 12 (Stata Corp, College Station, TX, USA), was used for all the statistical analyses.

Results

Of the 150 eligible patients, 123 (82%) cases accepted to participate. The mean age of the participants was 52.5±15.97 years (age range: 21 to 92 years). Of the 123 subjects, 78 (63.4%) were male. Patients' characteristics are presented in Table 1. Table 2 demonstrates the mean scores of the study variables including death anxiety, spiritual intelligence, quality of life, and spiritual health.

Spiritual health score was associated with death anxiety score in the hemodialysis patients. We found no association between other study measures as shown in Table 3. The linear regression analysis was conducted between the study variables and personal characteristics. There was a significant link between gender and death anxiety (*P=0.03*), economic status and death anxiety (*P=0.02*), religious beliefs and spiritual intelligence (*P=0.01*), educational level and quality of life (*P=0.01*), age at diagnosis and spiritual health (*P=0.01*), as well as death anxiety and spiritual health (P<0.05; Figure 1).

Table 1. The characteristics of hemodialysis patients

		Mean±SD/N (%)
Age		52.5±15.97
Age at diagnosis		45.65±17.90
The duration of dialysis		3.85±4.16
Place of residence	Urban	68 (55.3)
	Rural	55 (44.7)
Insurance	Yes	108 (87.8)
	No	15 (12.2)
Marital status	Single	16 (13)
	Married	96 (78)
	Divorce	11 (8.9)
Academic degree	Illiterate	83 (67.5)
	Under diploma	23 (18.7)
	Diploma	13 (10.6)
	Associate degree	4 (3.3)
Occupation	Self-employed	47 (38.2)
	Governmental job	17 (13.8)
	Unemployed	21 (17.1)
	Student	5 (4.1)
	House wife	33 (26.8)
Economic status	Low	39 (31.7)
	Moderate	79 (64.2)
	High	5 (4.1)
Main source of income	Personal	57 (46.3)
	Family and children	43 (35)
	Other sources	23 (18.7)
Current living status	Alone	11 (8.9)
	With family	112 (91.1)
Level of social support	Never	63 (51.2)
	Low	22 (17.9)
	Moderate	23 (18.7)
	Good	15 (12.2)
Religious beliefs	Low	10 (8.2)
	Moderate	40 (32.5)
	Good	36 (29.3)
	Very good	37 (30.1)
Death experience	Yes	39 (31.7)
	No	84 (68.3)

Table 2. The mean total scores of the study variables

Study variables	Total (N=123)
Death anxiety	67.07±14.15
Spiritual intelligence	155.6±29.12
Spiritual health	76.32±9.65
Quality of life	84.27±19.19

Table 3. The results of Pearson correlation

Study variables	Quality of life	Spiritual health	Death anxiety
Death anxiety	0.017	0.25*	1
Spiritual intelligence	-0.021	0.45	0.74
Spiritual health	0.89		

*P<0.05

Discussion

This study aimed to investigate the relationship between death anxiety and spiritual intelligence, spiritual health, and quality of life among hemodialysis patients. A wide range of discussions have been proposed on the effects of spirituality. Feriod regarded religion and religious beliefs derived from fear, he suggested that belief in religion is only explained inside the social construct just as ethics and conscientiousness. However, Young considered every kind of religious and spiritual belief, even if mixed with superstitions and primitive approaches, essential for mental and spiritual health of individuals (21). One way to reduce death anxiety is turning to religious tendencies, and it has been indicated that negative feelings towards religion increase fear of death (18, 22). In Islamic beliefs, there is no difference

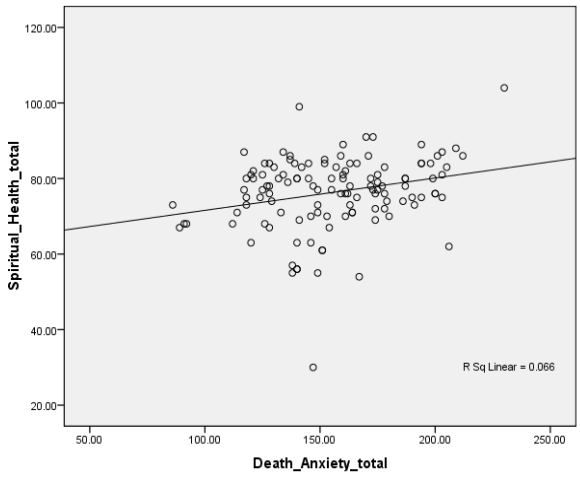

Figure 1. The scatter plot showing the regression line of death anxiety and spiritual health

between religion and spirituality (23). Religion and spirituality, to a large extent, are the most important factors in determining social structures, values, and behaviors in human beings (24).

The findings of this study illustrated that death anxiety of patients undergoing hemodialysis was above average. A study by Sherman et al. investigated the relationship between death anxiety and quality of life in HIV and cancer patients, which revealed high death anxiety in these groups of patients. It can be concluded that patients suffering from chronic diseases are exposed to high psychic stress and death anxiety (25). Also, there was a significant correlation between death anxiety and gender, that is, women reported higher death anxiety. The results of a study by Sohail et al. on the relationship death anxiety, religion, and gender in Pakistan showed that women suffered from higher death anxiety (26). In another study carried out by Soleimani et al., death anxiety in women was higher than in men (27). In the United States, the level of death anxiety in women was higher than in men, as well (28).

Death anxiety was significantly associated with socioeconomic status. In a study by Gras et al., it was found that higher economic level was linked with lower death anxiety, which was consistent with our findings (29); this outcome might be due to the fact that patients with higher economic and educational status have more access to information resources in connection with death that consequently reduces death anxiety in these people. Also, there was a significant relationship between educational level and quality of life. A study by Anna et al. on predicting quality of life in adults with chronic renal diseases, consistent with the present findings, showed that patients with higher educational level enjoyed higher quality of life; this finding was in line with results of several other studies (30). This can probably be due to lack of capability in the pursuit of self-care and low income.

This study also exhibited that most patients had moderate levels of spiritual well-being. Likewise, a study conducted by Allah Bakhshiann et al. showed that most patients had moderate spiritual health (31), while in the study by Hojjati et al. patients had high levels of spiritual well-being (32).

In addition, we found a significant relationship between religious beliefs and spiritual intelligence. Spiritual intelligence is used to solve problems and issues related to meaning of life and values (33). Most people consider spirituality and spiritual intelligence as a useful way to solve social and psychological problems (34).

Further, we noted a significant relationship between educational level and quality of life. In a study by Bayoumi et al., educational level of patients was among the variables affecting quality of life of the patients, that is, low educational level of patients was associated with low quality of life (26). The results of different studies proposed that patients with similar clinical conditions have different levels of quality of life.

Escofer believes that chaotic events do not affect people to the same extent and these effects are dependent on personality characteristics and one's evaluation of these events (27). In addition, there was a significant relationship between age at diagnosis and spiritual health. The results of a study on patients with AIDS by Bik et al. demonstrated that those who perceived the meaning of life based on spirituality during sickness, had better quality of life compared to the time of diagnosis (35).

Death anxiety is as a major concern in human life that can be affected by different factors including spiritual and religious issues. Considering the effects of spiritual beliefs on quality of life and religious and cultural structure of Iran, it is possible to promote quality of life in patients experiencing death anxiety by enhancing spiritual support.

Conclusion

This study showed a close relationship between spiritual intelligence, death anxiety, spiritual health, and quality of life and that promoting spiritual health and intelligence in hemodialysis patients can assuage death anxiety.

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Conflicts of interest

None declared.

Authors' contributions

B. Taghipour and SA. Hasani contributed to writing the first draft of the manuscript, designing the study, and performing data collection and analysis. S. Shahidifar and Z. Allahyari aided in study conception and design. F. Mehravar and H. Sharif Nia performed data analysis.

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