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# The Relationship Between Religious Attitudes, Fear of Death and Dying with General Health Condition: A Survey in College Students

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**Abstract** This study aims to assess the relationship between religious attitudes of Ilam universities students (west of Iran), their perspectives about the fear of self and other's death and dying, with their general health. This paper is an analytic survey in which 351 college students, who were selected by multistage sampling, participated. To measure interested variables, Persian format of standardized self-administered questionnaires was employed. Religious attitudes with odds ratio (OR) of 0.94 (95 % CI 0.91–0.97) and fear of self dying with 0.88 (95 % CI 0.81–0.96) were identified as a protective factors against the inappropriate general health condition. However, the fear of other's death (OR 1.16; 95 % CI 1.05–1.28) was identified as a risk factor. This study showed that people who had more religious attitudes and fear of self dying had better general health as well as the fear of other's death had a significant direct relationship with inappropriate general health condition.

**Keywords** Fear of death · Fear of dying · Religious attitude · General health

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## Introduction

With scientific progresses and increasing the human knowledge, it is completely evident that not only religious attitudes are an ideology, but also these beliefs have important health perspectives (Hourani et al. 2012; Neymotin and Downing-Matibag 2013). Nowadays, identifying different features and investigating different aspects of religious attitudes draw a lot of attention worldwide (Pressman et al. 1990; Coleman 2005; Kovacs 2009).

Attention to the effect of religious attitudes on health is increasing in scientific literature of industrial countries (Power and Smith 2008; King et al. 2013). The results of so many studies showed that there is an opposite relationship between religious attitudes and different dimensions of psychological diseases such as depression and anxiety (Tuck et al. 2006; Kovacs 2009). In contrast, some other studies not only rejected this negative relationship, but also believed that this relationship is positive (Carlozzi et al. 2010; Mann et al. 2010). Most of conducted studies focused on the relationship between mental health and spirituality, and little attention was paid to the role of this factor in physical and psychosomatic health.

According to the literature, Francis et al. (2004) showed that the teenagers who were more attracted to spirituality and Christianity had a higher level of general health. Callen et al. (2011) suggest that religious beliefs moderated the positive relationship between high level of stress and vulnerability to infectious diseases in older people and pose that people who are to some extent indifferent to religious beliefs are more likely vulnerable to infectious diseases. Delgado et al. indicate that there is a positive relationship between quality of life and paying a lot of attention to religious beliefs among people who suffer from chronic respiratory diseases. He also shows that religious beliefs reduce stress and anxiety (Delgado 2007). Tartaro et al. (2005) cite that having religious beliefs may lead to decreasing blood pressure in young men and increasing blood pressure in young women, and add that high level of religious beliefs through affecting the neuroendocrine system decreases stress and anxiety. But some other studies did not report any meaningful effect of religious attitudes on physical health. For example, Blumental et al. (2007) reported that there is no relationship between religious attitudes, the times that people go to the church and praying times of people with fatal heart attack and total mortality. In a case–control study, Roshi et al. (2005) found no difference between occurring myocardial infraction in people with different religions. Most of these studies were conducted around industrialized countries, and there is limit information around the role of spirituality, fear of death and dying on general health condition in developing country such as Iran. Meanwhile, according to our electronic-based literature review, there was no similar scholar research on the role of fear of death and dying with general health condition.

This analytic survey aims to study the relationship between Islamic religious attitudes of Ilam universities students (west of Iran), their perspectives about the fear of self and other's death and dying, with their general health condition.

## Materials and Methods

### The Study Design and Sampling

This paper is an analytic survey study in which 400 male and female students, who were selected by multistage sampling, participated (please see supplementary 1 for more information about sample size calculation). There were no specific exclusion criteria for

this survey study. Meanwhile, being college student in Ilam city was enough for inclusion. On the other hand, there was not any age limitation for inclusion. Each university was considered as a cluster (Ilam University of Medical Science, University of Ilam, Azad University of Ilam), and random sampling was conducted according to the number of students in each university. Sampling procedure was done with considering the university type (cluster), the number of students in each university, the number of classrooms (strata) and gender.

### Data Collection

To achieve the maximum number of students in each class and also to protect against potential selection bias, researchers distributed the questionnaires shortly before professor attending the class. Researchers explained the goals of the research and posed that the students are not forced to participate in the study and there was no need to write the name on the questionnaire. But they proposed that participants can write their cell phone number or e-mail address on the questionnaire in order to researchers send their general health score and interpretation. For those who did not like to answer the questions in the university, the questionnaire was given to them to be filled out at home or any other place they wanted to. After answering the questions, they were asked to deliver the questionnaires to researchers (response rate was 87.7 %;  $n = 351$ ).

### Measurement Tool and Scales

This study uses Persian format of CHQ-28 questionnaire (Ebrahimi et al. 2007) which is one of the most known screening test (Bridges and Goldberg 1986). Goldberg invented the questionnaire for the first time, and 28 question type is among the most valid ones (Banks 1983; Bridges and Goldberg 1986). The questions are about the general health of people emphasizing the psychosomatic issues at the present time. The answers are in the form of multiple choices: (1) more less than ever, (2) less than ever, (3) like ever and (4) more than ever. In all choices, lower number shows the higher levels of general health and vice versa. This questionnaire contains four subscales: (1) physical symptoms: seven questions for headache, faint, need for tonic medications and feeling hotness or coldness; (2) anxiety symptoms: seven questions for anxiety, insomnia, being under pressure, nervousness and uneasiness; (3) disorder in social interaction: seven questions for the ability to do daily work, satisfaction of doing duties, being usefulness, the power to learn and enjoying daily life actions; (4) depression symptoms: seven questions for feelings of worthlessness, hopelessness, nihilism, suicide thoughts, wishing to die and disability to do works. Scaling was done according to Likert method (0 1 2 3), and thus, the range of score was zero to 84. The lower scale indicates better general health condition. At the present study, we use the cut point of 24 to classify the population into two groups of low general health condition (inappropriate general health) and normal general health (Ebrahimi et al. 2007).

We employed a 25-question questionnaire consisting of five subscales to measure the variable of religious attitudes. Each selection scored from 0 to 4 based on Likert scale. The validity of the questionnaire was 0.8 which was measured according to correlation coefficient via Alport's, Renon's and Lindzi's tests (Sadeghi et al. 2010). At the present study, this variable is considered as continuous variable.

To measure fear of death and dying, we used Collett-Lester fear of death scale (Loo and Shea 1996). This questionnaire is composed of 4 categories: the fear of self death, the fear of other's death, the fear of self dying and the fear of other's dying. The ranks are

according to Likert scale: between zero (at all) and four (to some extent). Each categories of the questionnaire are used in the statistical analysis as continuous variable.

### Statistical Analysis

Significant interaction was not found between gender and independent variables (religious attitudes, fear of self and other's death and dying) to predict general health ( $p > 0.05$ ); thus, our analyses were not stratified by gender. Information pertaining to socioeconomic status was classified based on three indicators around family housing (mother education level, father education level and householder's job), which was reduced by principal component analysis (PCA) to produce a score that was stratified into three socioeconomic categories being low, middle and high class. The mean of fear of self and other's death and dying as well as mean of religious attitudes across general health condition and gender was presented using clustered bar chart. Chi-square test was used to find difference between categorical variables. *T* test was used to compare mean of continuous variables. Assumptions of the tests were assessed, and all assumptions were generally appropriate. Data normalization was checked by Kolmogorov–Smirnov test. Logistic regression (stepwise method) was used to find association between interested variables and general health condition (normal general health category vs. reference group). The criteria of inter variables in models were  $p < 0.2$ , and the criteria of remove variables from models were  $p > 0.1$ . All the analyses were conducted using Stata SE version 11.2 (Stata Corp LP, College Station, TX), and  $p$  values  $\leq 0.05$  were considered statistically significant. PASS software (version 11) was employed for calculation of sample size.

### Results

The population of this study was composed of 258 women (73.5 %) and 93 men (26.5 %) with the average age of  $22 \pm 3$  years. With respect to the previously mentioned cut point in the CHQ28 questionnaire, 84.9 % of men and 81.8 % of women were suspected to have inappropriate general health condition. Regarding the percentages, there was no meaningful difference between two genders. The mean of age in inappropriate general health category was significantly less than the healthy category. Also, the mean of religious attitudes in the inappropriate general health category was significantly less than healthy people category ( $p = 0.02$ ). Meanwhile, the mean of fear of self death was significantly higher in healthy group ( $p = 0.007$ ). This is also true about the variable of the fear of self dying ( $p = 0.001$ ). The fear of other's death is rather equal in two groups and shows no significant difference ( $p = 0.21$ ). But the fear of other's dying shows a significant difference ( $p = 0.05$ ) with higher mean in inappropriate general health category. Table 1 illustrates the details of percentage and mean of variable along with their statistical significance. Figure 1 shows the mean of the fear of self death, the fear of other's death, the fear of self dying and the fear of other's dying and religious attitudes with respect to general health condition of men and women. Regarding these graphs, the only remarkable difference is the lower mean of religious attitudes in men who are in inappropriate general health category versus healthy men, and also the higher mean of the fear of other's death in men of inappropriate general health category versus healthy men.

Univariable analysis using binary logistic regression model showed that the higher religious attitudes and fear of self dying lead to a significant decrease in the odds ratio (OR) of having inappropriate general health condition. But the fear of other's death and other's



**Table 1** Demographic and psychological characteristics of students across general health status categories

Variables	Normal general health <sup>a</sup> <i>n</i> (%)	Inappropriate general health <sup>a</sup> <i>n</i> (%)	Total <i>n</i>	<i>p</i>
Categorical variables				
Gender				
Male	14 (15.1)	79 (84.9)	258	0.49
Female	47 (18.2)	211 (81.8)	93	
Socioeconomic status				
Low class	2 (7.4)	25 (92.6)	27	0.001
Middle class	43 (15.5)	235 (84.5)	278	
High class	16 (36.4)	28 (63.6)	44	
Type of university				
Ilam university	33 (29.7)	78 (70.3)	111	<0.001
Ilam UMS <sup>b</sup>	20 (9.5)	190 (90.5)	210	
Azad university	8 (26.7)	22 (73.3)	30	
	Mean (SD)	Mean (SD)		<i>p</i>
Continuous variables				
Age	24.5 (5.4)	22.6 (2.9)	343	0.01
Religious attitudes	77.6 (15.2)	73.1 (13.1)	318	0.02
Fear of self death	28.8 (7.4)	25.9 (7.5)	341	0.007
Fear of self dying	31.6 (7.9)	28.0 (7.3)	353	0.001
Fear of other death	30.9 (7.6)	32.1 (6.5)	348	0.21
Fear of other dying	31.3 (8.4)	29.2 (7.4)	343	0.05

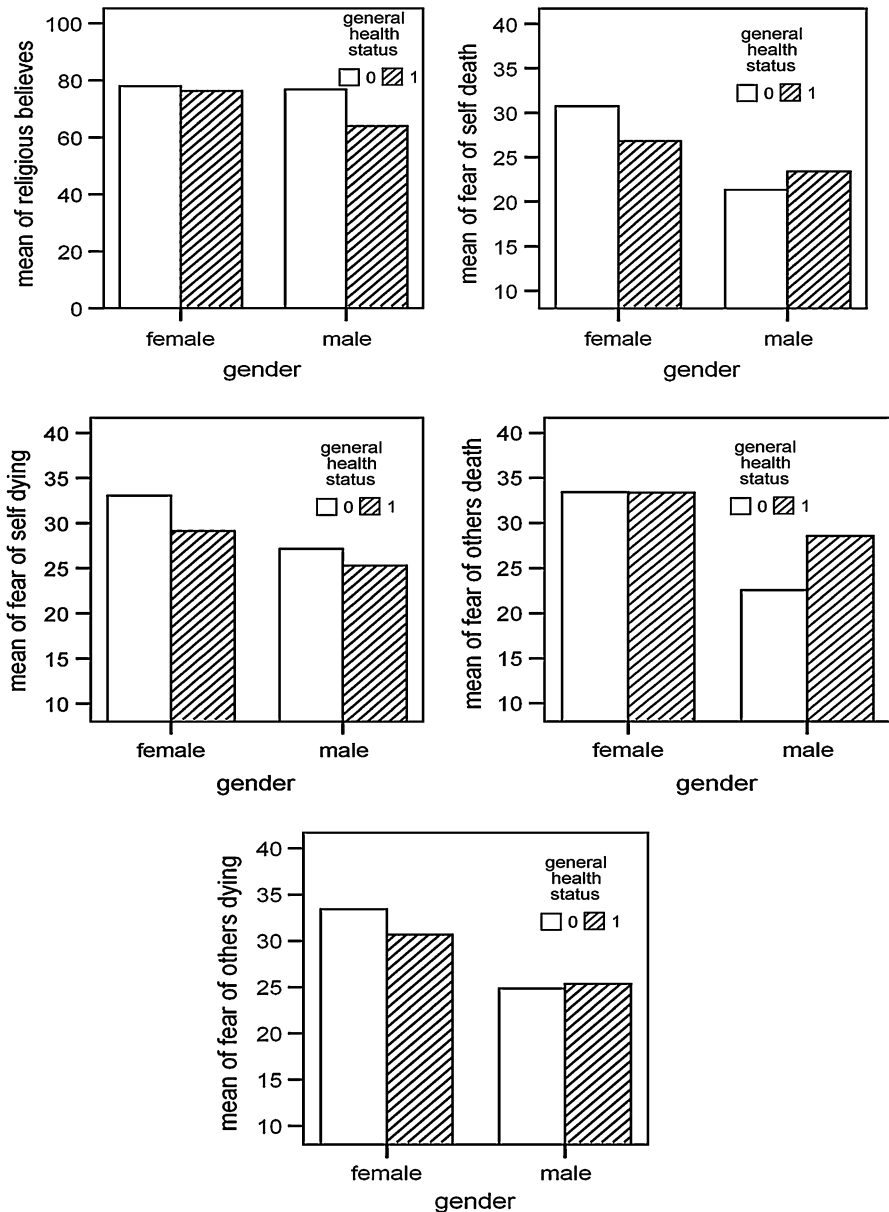
<sup>a</sup> Cut point of 24 used for classifieds the subjects into two groups of inappropriate general health and normal general health

<sup>b</sup> Ilam University of Medical Sciences

dying did not show any significant effect in univariable model. In contrast, in multivariable model, there are changes in meaningfulness and value of OR. In this model, religious beliefs and the fear of self dying showed a slight change in its OR. And also, the fear of other's death turned meaningful by adjusting the role of other variables in multivariable model. The details of the size of ORs, *p* value and their 95 % confidence intervals (CIs) are shown in Table 2.

## Discussions

With the aim of investigating the relationship between religious attitudes, various types of fear of death and dying with general health condition, this study was conducted with the population of 351 students of universities of Ilam city, Iran. The main finding of this study was to perceive the protective effect of religious attitudes, fear of self dying and also risk factor role of the fear of other's death with general health condition. Also, it is observed that the mean of religious attitudes in inappropriate general health group is lower in comparison with the healthy group, and this is more tangible among men. In addition, the



**Fig. 1** The mean of some important independent variables across general health status and participants gender. 0 Normal general health; 1 inappropriate general health

84 % of inappropriate general health prevalence in men and 81 % in women is enough to show the necessity to care about the physical and psychological health status of male and female students in Ilam city.

Logistic regression model shows that religious attitudes, both in crude analysis and multivariable model, have a protective effect on general health and more religious



**Table 2** Odds ratios and 95 % CIs of general health status for related factors, based on binary logistic regression models

Variables	Univariable model			Multivariable model <sup>a</sup>		
	OR	95 % CI	<i>p</i>	OR	95 % CI	<i>p</i>
Religious attitudes	0.97	0.94–0.99	0.02	0.94	0.91–0.97	0.001
Fear of self dying	0.93	0.89–0.97	0.001	0.88	0.81–0.96	0.005
Fear of others death	1.02	0.98–1.06	0.21	1.16	1.05–1.28	0.002
Fear of others dying	0.96	0.92–1.00	0.05	0.92	0.83–1.02	0.12

<sup>a</sup> Adjusted for age, type of university and socioeconomic status. Gender and fear of self death removed from model because of  $p > 0.1$

attitudes, and decreased the possibility of being in inappropriate general health condition. One possible explanation for such an association can be that the people who have more religious attitudes are more attracted to spiritual and metaphysical issues and consequently more tolerant against the difficulties and stresses of daily life. Religious attitudes act protective and make people to stand mundane difficulties more easily, and this mechanism has a protective effect on people's physical and psychological health. As it is evident from Islamic documents, human being owns both physical and spiritual dimensions. These two dimensions are closely connected to each other (Yousofi 2011). Thus, having more religious attitudes causes the physical health through meeting metaphysical and psychological needs. One of the remarkable findings of this study is the effect of self dying on general health to the extent that the OR of this variable is even less than religious beliefs, that is the more protective effect of this variable. The higher levels of the fear of self dying make people stand the difficulties of mundane world easily and see the world passing by and take themselves away from earthy affairs; therefore, it leads to improvement in general health condition.

This study shows that the fear of other's death increases the risk of inappropriate general health condition. A possible explanation for this might be that most people who are afraid of other's death have specific type of personality that is associated with both death and dying anxiety and general health condition. In this study, we did not measure personality type; consequently, more research on this issue needs to be undertaken before the association between fear of others' death and inappropriate general health is more clearly understood. On the other hand, the risk factor role of the fear of other's death has not been confirmed in crude analysis. After adjusting to other variables, this variable turned meaningful and this can be due to other variables have a considerable confounding effect on this variable.

The findings of this study confirm the findings of Francis's et al. (2004) study conveying that there is a positive relationship between being more attracted to Christianity and increasing the level of general health. Also, Elizabeth et al. found a meaningful relationship between ideology and spirituality with physical and psychological health in people who suffered from chronic pains. She proved that spirituality, religious support and self-reported rank of religion are among the variables that predict the physical and psychological status (Elizabeth Rippentrop et al. 2005). With the purpose of investigating the relationship between religious attitude and general health among married students of university of Tehran, Hosseinkhanzadeh and Niyazi (2011) conducted a research that whose result was compatible with the results of our study. Since their findings showed that

general health measured by Goldberg questionnaire can be predicted from the variable of religion, the results of AhmadiGatab (2011) research on the students of medical school of Babul showed that there is clear relationship between religious attitudes and the quality of students' life, and also, the higher religious attitudes have a direct relationship with general health status.

This study has some limitations that should be taken into account. One of the main limitations is the cross-sectional nature of study that limits to draw conclusion based on temporality to the extent that it will be impossible to believe that being in a good general health condition increases religious attitudes or people who are healthier do not fear their death. Also, there is no distinction between different categories of the variable of religious. In order to investigate the role of religiously intervention and the effect of increasing the different categories of religious attitudes on different aspects of physical health, randomized clinical trials are suggested for the future researches.

## Conclusion

We can conclude from the results that people who have more religious attitudes and have higher fear of self dying have more general health condition and the fear of other's death has a meaningful relationship with inappropriate general health condition.

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