

# Research Paper: An Investigation on the Relationship Between Self-efficacy With Spiritual Adjustment and Life Expectancy in Adult Earthquake Residents in Sarpol-e Zahab City, Iran in 2019



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## ABSTRACT

**Background:** Earthquakes are among the most natural catastrophic disasters. Adults' response to disasters largely depends on their physical health, mobility, self-efficacy, resource, and income level. The purpose of this study was to determine the relationship between self-efficacy with spiritual adjustment and life expectancy in earthquake-stricken adults living in Sarpol-e Zahab City, Iran.

**Materials and Methods:** The present study is a descriptive-analytical study that was done on 135 earthquake-stricken adults in Sarpol-e Zahab City. The study data were collected using the Scherer general self-efficacy questionnaire, Herth's life expectancy questionnaire, spiritual adjustment, and demographic data in Spring 1998. The obtained data were analyzed by SPSS version 24 and descriptive and inferential statistics.

**Results:** In this study, 135 adults were enrolled, 65.2% were men and the rest were women. The Mean±SD age of the samples was 41.64±11.49 years. The Mean±SD values of self-efficacy, spiritual adjustment, and life expectancy were 55.64±10.29, 150.47±35.17, and 28.44±5.75, respectively. There was a significant and positive correlation between self-efficacy and spiritual adjustment. There was a positive and significant relationship between self-efficacy and life expectancy as well as life expectancy and spiritual adjustment.

**Conclusion:** The findings of the present study showed a high correlation between self-efficacy, life expectancy, and spiritual adjustment. People with high spiritual well-being and life expectancy are more adaptable to their problems; accordingly, their reinforcement of spiritual well-being and life expectancy increases their adaptability to the situation. Therefore, it is recommended that educational programs be developed to increase the self-efficacy of earthquake-affected individuals and increase their life expectancy and spiritual well-being.

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## 1. Introduction

Human life is always faced with two kinds of natural and human problems. Unlike human issues, man is not responsible for the creation of natural disasters. These events happen from time to time and create heartbreaking catastrophes. In terms of surprise and unpredictability, the earthquake is ranked first among natural disasters [1]. Earthquake is among the most catastrophic disasters and leaves many casualties around the world annually. Iran is also one of the earthquake-prone countries in the world because it is located on one of the seismic belts [2]. Since 2000, major earthquakes have killed and injured more than 800000 people. In addition to physical injuries, evidence has shown that many earthquake victims suffered from mental disorders, which in turn, caused physical diseases and reduced their quality of life [3, 4].

According to Rivera, “Numerous studies have attempted to identify psychological resources that positively help prevent or reduce the risk of mental disorders”. Among the known protective variables are self-efficacy and spirituality [5]. One of the essential factors in maintaining physical and mental health status is to improve self-efficacy status [6]. Alfred Bandura coined the concept of self-efficacy, and it is a part of Bandura’s social cognitive theory. It means believing in one’s ability to complete tasks and achieve goals. It can affect the amount of effort and level of performance [7]. Self-efficacy is a vital prerequisite for behavior because it acts as an independent part of the basic skills of the individual, and most of those who are confident about their ability to take care of themselves have more tendency to complete their tasks [8].

People with a higher level of self-efficacy set higher goals for themselves, and as a result, their behavior becomes more desirable, while for people with lower self-efficacy, the result of their behavior is not appropriate. People with low self-efficacy can easily be persuaded that their behavior is useless, and therefore, they give up quickly. On the other hand, people with a high level of self-efficacy overcome obstacles and problems by improving self-management skills and perseverance. They have more control over their affairs and experience less uncertainty [9, 10].

On the other hand, human beings may take refuge in God in difficult life situations, where they have lost their support and hope, and it usually has a positive effect on their performance [11]. Many people resort to spirituality in the face of diseases and problems. Besides, there is evi-

dence that resorting to spirituality is effective in dealing with and improving mental and physical problems [12].

Spirituality refers to how people seek and express the meaning and purpose of their lives and experiences in connection with themselves, others, nature, spirituality, or sanctification. Among these, spiritual coping means using religion and spirituality to deal with stressful situations that occur during life [13, 14]. Spiritual coping resulting from a sense of connection with God reduces the effects of stressful life situations and has a positive effect on improving mental state and satisfaction. In general, spirituality and spiritual coping is an integral part of an individual’s lives and has significant effects on their health [15].

Hope, like spirituality and spiritual coping, is another concept that plays a vital role in dealing with problems and tensions resulting from it [11, 16, 17]. Life expectancy is a statistical indicator that shows the average life expectancy in society. In other words, each member of that community can expect to live for several years. As health and therapeutic indicators improve, life expectancy will increase. Furthermore, this index is one of the indicators for measuring the progress and backwardness of countries [18]. Life expectancy is an essential criterion for the impact of mortality on life expectancy and reflects a disease in a population [19].

Nurses, especially community health nurses, have a set of skills to serve the community, and they are serving for more than a century in the field of disasters. Traumatic events, such as earthquakes, are hazardous and beyond the ordinary experiences of individuals. Many people have specific psychological reactions to traumatic events. They startle and get confused at first and do not realize what harm has been done to them, but then thoughts, feelings, or behaviors appear among people who have been hurt or have witnessed painful scenes. These people get worried about being alone, their safety, health, and the lives of their loved ones, and they will experience bewilderment. Given that few studies have been conducted on problems and disorders in earthquake-stricken victims living in Sarpol-e Zahab, the present study aimed to determine the relationship between self-efficacy, spiritual coping, and life expectancy in earthquake-stricken adults living in Sarpol-e Zahab City, Iran, in 2019.

## 2. Materials and Methods

The present study is a descriptive-analytical cross-sectional study conducted on adults affected by the earthquake in Sarpol-e Zahab City of Kermanshah Province,

Iran, in 2019. The statistical population included all adult residents (20 or more years old) affected by the earthquake in Sarpol-e Zahab City. Sampling performed using the convenience sampling method.

Moreover, the sample size required was calculated by determining the simple correlation coefficient between self-efficacy with spiritual coping and life expectancy at the level of error  $\alpha=0.05$ , test power of 80% ( $\beta=0.2$ ) and the minimum value of correlation coefficient for the significance of the relationship of 0.25 in the hypothesis test  $\rho=0$  against  $\rho\neq 0$ . By considering the sample exclusions and their reluctance to participate at any time of the study period, the number of samples estimated to be 123 that entered the study based on the inclusion criteria, i.e., all adults affected by the earthquake in Sarpol-e Zahab who were willing to cooperate and were resident of Sarpol-e Zahab City during the earthquake.

In the present study, data collection was performed using a questionnaire consisting of four sections. The first part included demographic information of the subjects, such as age, gender, financial status, marital status, education, occupation, housing status, number of family members, number of children, monthly income, the rate of property damaged, and losing someone in the earthquake. The second part included Sherer standard General Self-efficacy (GSE) scale (Appendix 1). This questionnaire has 17 questions that are scored on a Likert-type scale from “strongly disagree” (score 1) to “strongly agree” (score 5). Items 1, 3, 8, 9, 13, 15 are scored from 1 to 5, and the rest from 5 to 1 in reverse order. The maximum score was 85, and the minimum 17.

Higher scores indicated a high sense of self-efficacy, and the lower scores weak self-efficacy. This scale has been translated and validated by Barati (1996). Bakhtiari Barati (1997) examined the correlation of this scale with measures of several personality traits (Rotter’s locus of control scale, personal control subscale, the Marlowe–Crowne social desirability scale, and the Rosenberg interpersonal competency scale) to measure the construct validity of the general self-efficacy scale. The predicted correlation between the self-efficacy scale and personality traits measurements was average (0.61 at the significance level of 0.05) and confirmed the target construct. Also, the reliability coefficient of the scale using the Guttman split-half scaling method was 0.76. This value was obtained using the Cronbach alpha coefficient of 0.79 [20].

The third part of the questionnaire was the Herth Hope Index (Appendix 2) developed in 1999 to measure life expectancy and had 12 three-choice questions. Items

of the questionnaire had options of “I agree”, “I am not sure”, and “I disagree”. There was no time limit for completing the questionnaire. For questions 3 and 6, options “I agree”, “I am not sure”, and “I disagree” were assigned scores of 1, 2, and 3, respectively. The rest of the questions are scored in reverse. A score of 12-24 showed a low level of hope; scores 25-30 showed an average level of hope and scores 31-36 showed a high level of hope.

The fourth part of the standard questionnaire was spiritual coping. This questionnaire was a self-report tool to measure the individual’s spiritual coping. The questionnaire was designed and validated by Rassouli et al. (2009) using both qualitative and quantitative methods according to the religious and cultural context of Iran. This questionnaire consisted of 39 questions and investigated three components (the meaning of life, communication with God, seeking spiritual support). The scoring method for all items was as follows: 5: Strongly agree; 4: Agree; 3: Not sure; 2: Disagree; 1: Strongly disagree. Questions 1 to 15 investigated the meaning of life, questions 16 to 26 investigated communication with God; finally, the remaining questions investigated seeking spiritual support.

In their study, Rassouli et al. (2009) reported the validity of the spiritual coping scale (Appendix 1) to be 0.897 obtained by correlating it with the adolescents’ spiritual attitude scale. Moreover, the test-retest correlation coefficient with three weeks interval was reported to be 0.712. Also, the reliability of their questionnaire was reported to be 0.96, using the Cronbach alpha [15]. After obtaining their satisfaction and explaining the objectives of the study, the researcher gave the questionnaire to the subjects. After collecting information using the questionnaires completed, SPSS v. 24 was used for statistical analysis. To analyze the obtained data, descriptive statistical tests such as mean and standard deviation, frequency, frequency percentage, and inferential tests such as the Spearman correlation, independent t test, and Analysis of Variance (ANOVA) were used.

### 3. Results

Among 135 subjects of the study, 65.2% were men, and 34.8% were women. In terms of age, the highest frequency was related to individuals in the age group of 20-40 years (48.9%), and the Mean $\pm$ SD age was 41.64 $\pm$ 11.49 years. About 88.1% were married, and 43.7% had 1 or 2 children (Table 1). Self-efficacy for 6.7% of people was at a poor level, for 64.4% at a moderate level, and for 28.9% at a good level. The mean self-efficacy score for the subjects was 55.64 $\pm$ 10.29 (Table 2). The spiritual coping score was at an appropriate level for 70.4%,

**Table 1.** Frequency distribution of subjects based on individual characteristics

Variable	Category	No. (%)	Mean±SD
Gender	Male	88 (65.2)	-
	Female	47 (34.8)	
Age (y)	20-40	66 (48.9)	61.64±11.49
	41-60	65 (48.1)	
	Over 60	4 (3.0)	
Marital status	Married	119 (88.1)	-
	Single	16 (11.9)	
Number of children	Single (no children)	16 (11.9)	2.54±1.73
	No children	8 (5.9)	
	1-2 children	59 (43.7)	
	3-4 children	42 (31.1)	
	5 children and more	10 (7.4)	
Total		135 (100.0)	

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**Table 2.** Frequency distribution of subjects based on self-efficacy level and average self-efficacy score

	Category	No. (%)	Mean±SD
Level of self-efficacy	Weak (scores 17-39)	9 (6.7)	55.64±10.29
	Moderate (scores 40-62)	87 (64.4)	
	Good (scores 63-85)	39 (28.9)	
Total		135 (100.0)	

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63.7%, and 63.0% in the meaning of life, communication with God, and seeking spiritual support, respectively.

The average scores of the subjects were 59.46±13.54, 41.70±10.33, 49.31±12.27 for the meaning of life, communication with God, and seeking spiritual support, respectively. In general, the spiritual coping scores were low, moderate, and high for 8.9%, 23.7%, and 67.4% of the subjects, respectively. The Mean±SD score of spiritual coping for the subjects was 150.47±35.17 (Table 3). Life expectancy scores were low, moderate, and high for 25.9%, 28.1%, and 45.9% of the subjects, respectively. The Mean±SD life expectancy score for the subjects was 28.44±5.75 (Table 4). The results of the Pearson correlation coefficient showed a direct and significant relationship between self-efficacy and spiritual coping ( $r=0.274$ ,  $P=0.001$ ) and dimensions of meaning of life ( $r=0.311$ ,  $P<0.001$ ), communication with God ( $r=0.220$ ,  $P=0.010$ ), and seeking spiritual support ( $r=0.258$ ,  $P=0.003$ ).

With the increasing self-efficacy of individuals, the level of spiritual coping in them has also increased significantly, and vice versa. According to the result of the Pearson correlation coefficient, there was a direct and significant relationship between self-efficacy and life expectancy scores ( $r=0.511$ ,  $P<0.001$ ) among Sarpol-e Zahab earthquake victims. As the self-efficacy of individuals increased, their life expectancy increased significantly and vice versa. In addition, according to the result of the Pearson correlation coefficients, there was a direct and significant relationship between life expectancy and spiritual coping scores ( $r=0.592$ ,  $P<0.001$ ), the meaning of life ( $r=0.584$ ,  $P<0.001$ ), communication with God ( $r=0.542$ ,  $P=0.010$ ), and seeking spiritual support ( $r=0.595$ ,  $P<0.001$ ). As the life expectancy of subjects increased, the level of spiritual coping also increased significantly among them (Table 5).

**Table 3.** Frequency distribution of subjects based on spirituality coping level and the average spirituality coping score

Variable	Category	No. (%)	Mean±SD
Meaning of life	Weak (scores 15-35)	11 (8.1)	59.46±13.54
	Moderate (scores 36-55)	29 (21.5)	
	Good (scores 56-75)	95 (70.4)	
Communication with God	Weak (scores 11-25)	14 (10.4)	41.70±10.33
	Moderate (scores 26-40)	35 (25.9)	
	Good (scores 41-55)	86 (63.7)	
Seeking spiritual support	Weak (scores 13-30)	15 (11.1)	49.31±12.27
	Moderate (scores 31-48)	35 (25.9)	
	Good (scores 49-65)	85 (63.0)	
	Weak (scores 39-91)	12 (8.9)	
	Moderate (scores 92-143)	32 (23.7)	
	Good (scores 144-195)	91 (67.4)	150.47±35.17
Total		135 (100.0)	

**Table 4.** Frequency distribution of subjects based on life expectancy level and average life expectancy score

Variable	Category	No. (%)	Mean±SD
Level of life expectancy	Weak (scores 12-24)	35 (25.9)	28.44±5.75
	Moderate (scores 25-30)	38 (28.1)	
	Good (scores 31-36)	62 (45.9)	
Total		135 (100.0)	

**Table 5.** Investigating the relationship between self-efficacy, spiritual coping, life expectancy, and their dimensions

Variable	Self-efficacy		
	No.	Correlation Coefficient	P
Meaning of life	135	0.311 **	<0.001
Communication with God	135	0.220 *	0.010
Seeking spiritual support	135	0.258 **	0.003
Spiritual coping	135	0.274 **	0.001
Life expectancy	135	0.511 **	<0.001
Meaning of life	135	0.584 **	<0.001
Communication with God	135	0.542 **	<0.001
Seeking spiritual support	135	0.595 **	<0.001
Spiritual coping	135	0.592 **	<0.001

#### 4. Discussion

The results of this study showed a significant positive relationship between self-efficacy and spiritual coping and life expectancy. In the present study, the majority of subjects had a moderate and reasonable level of life expectancy and spiritual health and a moderate level of self-efficacy. Mikaeli et al. (2015) conducted a study entitled "Analysis of the relationship between hope, self-efficacy, motivations, and academic stressors and academic adjustment among undergraduate students of Urmia University". The results of their study showed that self-efficacy, motivation, hope, academic stressors, and academic adjustment had a significant relationship with each other [20]. Their findings were consistent with those of our study in terms of the relationship between self-efficacy and hope.

The results of the study by Marzabadi (2015) entitled "The relationship between physical and mental health and spirituality and self-efficacy in military personnel" showed a significant positive relationship between physical, mental health, and self-efficacy and also between spirituality and self-efficacy. In general, the results showed that the self-efficacy of military personnel could be increased by promoting physical and mental health and spirituality [21]. These findings are consistent with those of the present study in terms of the relationship between spirituality and self-efficacy.

Chabok (2017) also investigated the relationship between self-efficacy and spiritual health in the Iranian elderly. The results of his study indicated a significant relationship between self-efficacy and spiritual health and its existential and religious dimensions. Another result of his study showed that increasing spirituality and spiritual health in the elderly could improve self-efficacy and promote mental health [22]. Hassan Shahi (2016) conducted a study entitled "The relationship between spiritual health, self-efficacy, and discouragement in medical students". The result of his study showed a significant inverse relationship between discouragement and self-efficacy, in such a way that the level of self-efficacy decreased with increasing discouragement. On the other hand, there was a significant positive relationship between spiritual health and self-efficacy, and increasing spiritual health led to increased self-efficacy [23]. These findings are consistent with those of the present study regarding the relationships between spiritual health and self-efficacy and hope and self-efficacy.

In explaining the obtained results, it can be said that one of the factors that can reduce pain during illness and even

increase the hope and likelihood of recovery is spirituality, and anyone can experience it [24, 25]. Spirituality can be a source of support for the sick and at-risk people [26]. Increasing a person's spiritual level can increase his or her self-esteem, create positive emotions, and promote effective care practices for creating a healthy lifestyle. They all improve the quality of life [27]. On the other hand, self-efficacy means believing in one's ability to complete tasks and achieve one's goals. This concept can affect the amount of effort and level of performance [7]. Therefore, regarding the possible cause of the relationship between self-efficacy and spiritual coping and life expectancy, people who have higher spirituality and consider spirituality as a way to overcome the problems arisen and engage in spiritual coping believe in their abilities more. They have taken refuge in God, and after God in themselves and their abilities to improve the situation, so there is more life expectancy in these people.

#### 5. Conclusion

The findings of the present study showed a high level of correlation between self-efficacy, life expectancy, and spiritual coping. People with high spiritual health and life expectancy are more easily cope with their problems, and strengthening spiritual health and life expectancy increases people's adaptation to the circumstances. Also, spiritual health and life expectancy in people develop a new and positive attitude towards themselves, others, and the world around them. Because self-efficacy is people's belief in their abilities and skills, a high level of spiritual health and life expectancy in people make them have a favorable view of themselves and judge their skills and abilities correctly. Thus, a high level of spiritual health and life expectancy will lead to a high level of self-efficacy. Therefore, it is recommended that training programs be designed to increase self-efficacy, life expectancy, and spiritual coping skills in earthquake victims.

#### Research limitations

Lack of random selection of study subjects was one of the limitations of the research.

#### Ethical Considerations

#### Compliance with ethical guidelines

This study was approved by the Ethics Committee of the Kermanshah University of Medical Sciences (Code: IR.IAU.YAZD.REC.1398.008). Also, Informed consent was obtained from all the research participants. The

present study did not cause any harm or cost to the participants.

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### Authors' contributions

All authors contributed equally in preparing all parts of the research.

### Conflict of interest

The authors declared no conflict of interest.

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## Appendix

### Appendix 1. Sherer General Self-Efficacy Scale (GES)

Row	Phrases	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
1	When I make plans, I am certain I can make them work					
2	One of my problems is that I cannot get down to work when I should					
3	If I cannot do a job the first time, I keep trying until I can					
4	When I set important goals for myself, I rarely achieve them					
5	I give up on things before completing them					
6	I avoid facing difficulties					
7	If something looks too complicated, I will not even bother to try it					
8	When I have something unpleasant to do, I stick to it until I finish it					
9	When I decide to do something new, I go right to work on it					
10	When trying to learn something new, I soon give up if I am not initially successful					
11	When unexpected problems occur, I do not handle them well					
12	I avoid trying to learn new things when they look too difficult for me					
13	Failure just makes me try harder					
14	I feel insecure about my ability to do things					
15	I am a self-reliant person					
16	I give up easily					
17	I do not seem capable of dealing with most problems that come up in life					

**Appendix 2.** The Herth Hope Index

1. I have a positive look on life		
a. I agree	b. I am not sure	c. I disagree
2. I have a goal for today, tomorrow, and the next days		
a. I agree	b. I am not sure	c. I disagree
3. I feel everybody is alone		
a. I agree	b. I am not sure	c. I disagree
4. I can see the light of hope		
a. I agree	b. I am not sure	c. I disagree
5. I have faith, and that faith makes me calm		
a. I agree	b. I am not sure	c. I disagree
6. I feel scared about the future		
a. I agree	b. I am not sure	c. I disagree
7. I can remember happy and pleasant times		
a. I agree	b. I am not sure	c. I disagree
8. I have deep power, and I rely on myself		
a. I agree	b. I am not sure	c. I disagree
9. I can understand love and affection, and also I can love others		
a. I agree	b. I am not sure	c. I disagree
10. I feel I have control over my life		
a. I agree	b. I am not sure	c. I disagree
11. I believe that everybody is not the same as yesterday, and every day has its characteristics		
a. I agree	b. I am not sure	c. I disagree
12. I feel that my life is valuable, both materially and spiritually		
a. I agree	b. I am not sure	c. I disagree

Appendix 3. Spiritual Coping Scale (Rassouli et al., 2009)

Row	Phrases	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
1	God is my supporter					
2	God has guided me					
3	I thank God that I have a place to live					
4	I seek help from God					
5	God has helped me a lot in life					
6	Life difficulties are tests by God					
7	I trust in God in times of trouble					
8	Faith in God makes me think that someone is always helping me					
9	God is my best friend					
10	God has solved many of my unsolvable problems					
11	When I communicate with God, the problems do not seem so big					
12	If it were not for God's grace, my life situation would have been worse					
13	Gratitude for God's blessings is one of the ways to communicate with Him					
14	I seek help from God to deal with my current problems					
15	Belief in God solves problems					
16	Praying is one of the ways to deal with the problem					
17	I pray that God will show me the right path and the meaning of life					
18	Trusting God makes affairs progress better					
19	I pray for the problems of others					
20	Trusting God is one way to deal with problems					
21	Praying is one way to deal with a problem					
22	Thinking about God is one way to communicate with God					
23	I like to use spirituality to solve my problems					
24	Spirituality solves problems					
25	Because of the current situation, I consider myself close to God					
26	Spirituality has played a significant role in my life					
27	Spirituality makes peace					
28	I feel that God cares about me					
29	I seek spiritual help to achieve peace					
30	Talking about spiritual matters calms me down					
31	God helps me with prayer					
32	Talking about spiritual issues solves the problems					
33	I have received many Divine aids					
34	God listens when I talk to Him					
35	Working is a spiritual solution					
36	If God deems it expedient, my problem will be solved					
37	Strong faith in God reduces problems					
38	Art is a kind of spirituality					
39	Spiritual people are confident individuals					

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