



# Research Paper: The Mediating Role of Spiritual Experiences With Ego Strength on Adaptation to Dialysis



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## ABSTRACT

**Background and Objectives:** In the care and treatment of patients in need of dialysis, spiritual experiences as a method of problem-solving in crises and problems can facilitate adaptation to dialysis. This study investigated the mediating role of spiritual experiences with ego strength on the adaptation to dialysis.

**Methods:** The statistical population included all patients in need of dialysis referred to the Educational-Research Center of Abu Ali Sina Hospital in Shiraz City, Iran, in 2019. Out of them, 120 patients were selected by a convenience sampling method. The study data were collected through the Daily Spiritual Experiences Scale (DSES), ego strength, and adaptation to disease. Then, the obtained data were analyzed based on structural equations in Amos v. 21 software.

**Results:** The findings showed that ego strength is significant with spiritual experiences and adaptation to dialysis. But the relationship between spiritual experiences and adaptation to dialysis is not significant. Also, the direct and indirect effects of the variables showed that ego strength as a predictor variable and spiritual experiences as a mediating variable could predict adaptation to dialysis ( $P < 0.01$ ). But the ego strength through spiritual experiences cannot predict adaptation to dialysis.

**Conclusion:** According to the research findings, ego strength can predict disease adaptation in dialysis patients, but daily spiritual experiences cannot lead to disease adaptation in dialysis patients.

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## Introduction

Chronic renal failure is an irreversible and usually progressive decrease [1]. The burden of chronic diseases such as Chronic renal failure is one of the greatest challenges to health systems in the 21st century. It is estimated that by 2020, 1200 out of one million people will develop inflammatory kidney diseases [2]. Patients who reach the end stage of kidney disease need alternative kidney treatments, including hemodialysis or kidney transplantation, to survive. Although the frequency of treatment for kidney replacement varies in different geographical areas, the most common method used in most patients is hemodialysis [3]. While dialysis treatment can compensate for kidney failure, this method of therapy disrupts patients' daily activities and can be a stressor that affects the psychosocial health of patients [4]. Dialysis patients face many challenges in dealing with the stresses of chronic illness [5], and they need to adapt to the psychological, physical, and social dimensions of coping with the disease. Psychological adaptation to illness maintains a positive attitude towards oneself and the world despite having physical problems [6].

Compared to other variables related to illness, psychological adaptation is the strongest predictor of using health services [7], and poor adaptation to the disease also reduces the rate of adherence to treatment [8]. Coping with a chronic illness is a dynamic process that is constantly affected by individual and environmental factors. The patient can better achieve self-control of his disease by increasing physical and psychological adaptation [9]. In this process, the patient must face individual and environmental challenges to achieve acceptable physical and mental health, a proper social function, and a successful adaptation [10]. Psychosocial adaptation to disease is a way to maintain or increase the health-related quality of life in patients [11].

Spirituality plays the most important role in the health-related quality of life for patients with life-limiting diseases [12]. Glyford [13] believed that spiritual experience includes religious attitudes, practical aspects, mental health, supernatural beliefs, and religious practices. And while he considers religion as the union of man with a larger being, he equates spirituality with life. Myers [14] also considers spiritual experience a constant search for meaning and purpose in life, a deep understanding of the life value, the vastness of the universe, the existing natural forces, and the system of personal beliefs. Spiritual experience can help people. It creates meaning in life, a sense of belonging and hope to the

supreme power, and one's belief in coping with stressful life situations and chronic diseases [15]. The ability to give meaning to life provides a reference for interpreting phenomena and events based on the cognitive actions of religion and belief in God and trust in him [16]. For many people, spirituality and religion are important aspects of their existence. It provides a source of support and determination to deal with daily life problems [17]. Spiritual experience makes people feel at ease with themselves [18]. Patients with low spirituality experience more anxiety and stress, and discomfort resulting from problems such as pain, low self-esteem, and loneliness [19]. But those with non-religious coping strategies, such as being punished by God, questioning God's power and love, show poor adaptation in managing stressful events [20]. Research has shown that hope and spirituality can help improve adaptation and emotional resilience through the experience of positive emotions and attention to positive things in life. Hope and spirituality are directly related to a better understanding of health [21].

Research has also shown that spiritual health plays a moderating role in the relationship between ego strength and coping with illness [22]. The results of another study showed that religious beliefs in patients with sickle cell disease help them to manage their diseases and find meaning in their experiences [23]. Religion helps patients with kidney diseases to overcome their emotional stress [24]; there is a negative relationship between spiritual experiences and pain catastrophe among patients [25].

Another key predictor of how individuals function in the face of environmental stressors is ego strength [26]. Ego strength refers to the capacity of the "I" to handle the conflicting demands of the institution, the superego, and the requirements of external reality. To the extent that the "I" cannot strike a functional balance, the individual's personality is impaired [27]. Ego strength is defined as the efficiency of the ego in regulating impulses and dominating the environment [28]. Ego strength helps a person to maintain emotional stability in stressful and debilitating situations.

Conversely, if the ego is not sufficiently capable, the person becomes embroiled in a struggle of demands and conflicts, and experiences emotional turmoil. Ego weakness is one of the leading indicators of psychopathology in psychodynamic approaches [29]. Ego strength helps people achieve emotional balance and adapt to internal and external stress [30]. Ego strength is determined based on an individual's psychological abilities to resolve internal and psychological conflicts and interact with the environment. It comprises ego control, ego tolerance, defense

mechanisms, coping strategies, and cognitive actions [22]. Research evidence shows that a weak ego results in poor adherence to dialysis treatment and can exacerbate psychiatric symptoms such as depressed mood [31].

Considering the necessity of addressing psychosocial adaptation in dialysis patients and determining its predictors such as religious affiliation and ego strength and their role in increasing the tolerance of incurable diseases, we decided to know whether spiritual experiences mediate ego strength and adaptation to dialysis.

## Methods

The present study is a descriptive study with a structural equation modeling design. The statistical population included all dialysis patients referred to the Educational-Research Center of Abu Ali Sina Hospital in Shiraz City, Iran, in 2019. From this population, 120 patients were selected by a convenience sampling method in the morning and afternoon shifts. In two shifts, the patients who were referred for dialysis were asked to participate in the study. Patients' consent to participate in the study was a condition for the distribution of questionnaires. Also, before completing the questionnaires, the necessary explanations about the purpose of the research were given to the participants. They were assured that the obtained information through the questionnaires would not be given to anyone in any way. In addition to descriptive statistics, the Pearson correlation coefficient and multiple regression were used to analyze the data in SPSS v. 21 and Amos v. 21.

## Research tools

### Disease adaptation

The Derogatis psychosocial adjustment scale has been designed to assess psychosocial adaptation to illness [32]. This scale includes 46 questions and 7 subscales of attitude towards illness (8 questions), work environment (6 questions), family environment (8 questions), sexual relations (6 questions), development of family relationships (5 questions), social environment (6 questions), and psychological disorders (7 questions). The scale scoring is based on 4-point Likert (0=not at all to 3=absolutely); the higher scores indicate worse compatibility status. In the current study, the scale reliability using the Cronbach  $\alpha$  values for the mentioned subscales were 0.47, 0.76, 0.77, 0.62, 0.83, 0.80, and 0.85, respectively. The construct validity of this scale using varimax rotational exploratory factor analysis showed that the above-mentioned seven components respectively explain 0.18,

0.10, 0.9, 0.8, 0.7, 0.7, 0.5, and in total 0.63 of the variance of the whole scale [33].

### Daily spiritual experiences

Underwood L Teresi developed the 16-item scale of daily spiritual experiences to examine a person's perception of a higher force (Allah, God) in everyday life and his or her perception and interaction with the non-material world [34]. The items are scored on a 6-point Likert scale (1="never" to 6="most of the time"), and the higher scores indicate higher spiritual experiences. The maximum score is 96, and the minimum score is 16. The scores between 16-36 are labeled relatively weak in spirituality, scores 37-56 moderate, 57-76 high, and 77-96 are very strong. Underwood L, Teresi assessed the scale's internal consistency using the Cronbach  $\alpha$  of 0.94 and 0.95 in two scales. The validity of the spiritual experiences scale has been reported acceptable through its correlation with the optimism scale of Scheier et al. [35]. Hayati and Fatemi Aqda reported the scale's reliability as 0.81 calculated by the Cronbach  $\alpha$  coefficient [36]. Also, the scale's validity was 0.71 compared with the Allport religious orientation questionnaire (1950), which indicates its good validity [37].

### Ego strength scale

The ego strength scale was developed by Baron (1953) to assess a person's overall psychological adjustment [38]. The ego strength scale was first adapted from the revised form in MMPI-2 and has 52 two-choice questions (yes-no), scored as 0 and 1. The test-retest coefficients of the ego strength scale in men and women were reported to be 0.80 and 0.82, respectively [39].

## Results

Among the participants, 48.34% (n=58) were women and 51.66% (n=62) were men. About 23.33% (28 people) were single, and 76.67% (92 people) were married. Also, 16.66% (20 people) were involved in the disease for less than 1 year, 50% (60 people) between 1 to 10 years, 25.84% (31 people) between 11 to 20 years, and 7.5% (9 people) for over 20 years. The results also showed that their mean $\pm$ SD values of ego strength, spiritual experiences, and adaptation to disease were 81.36 $\pm$ 5.16, 44.83 $\pm$ 16.7, and 114.79 $\pm$ 9.23, respectively.

To test the research hypotheses, we used the correlation coefficient, the results of which are presented in Table 1.

**Table 1.** Correlation coefficient matrix between research variables

Variables	Ego Strength	Spiritual Experiences	Disease Adaptation
Ego strength	-		
Spiritual experiences	0.29**	-	
Disease adaptation	0.22**	0.28**	-

\*\* P<0.01.



According to Table 1, the correlations between ego strength and spiritual experiences (0.29), ego strength and adaptation to disease (0.22), and spiritual experiences with adaptation to disease (0.28) are significant at the level of 0.01.

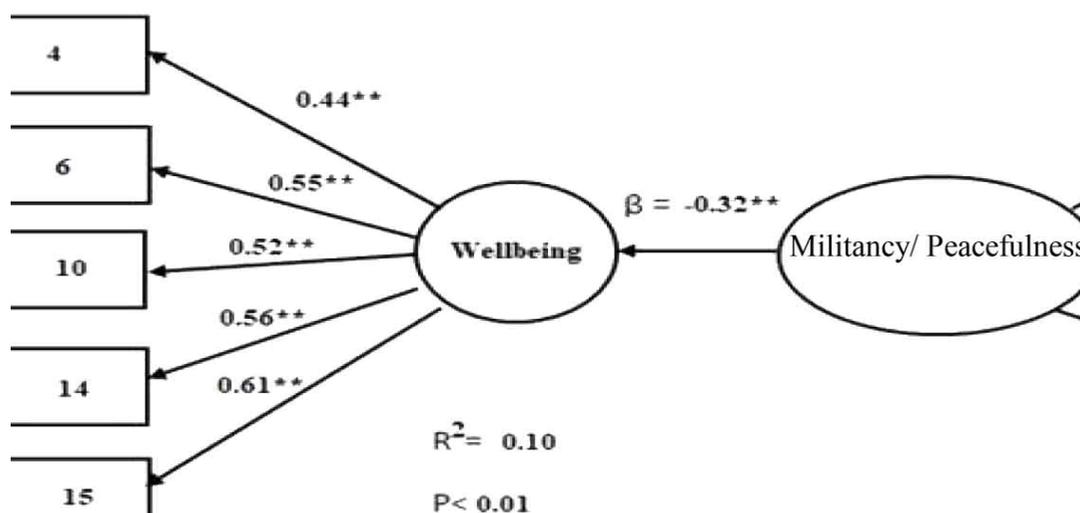
The model studied in the research to investigate the relationship between ego strength and adaptation to disease with the mediating role of spiritual experiences is shown in Figure 1. As shown in Figure 1, ego strength is significant in spiritual experiences and adaptation to disease. The relationship between spiritual experiences and adaptation to disease is also significant.

The direct and indirect effects of predictor and mediator variables on the dependent variable are shown in Table 2. The results of Table 2 show that ego strength as a predictor variable and spiritual experiences as a mediator variable can predict adaptation to disease (P<0.01). But ego strength through spiritual experiences cannot predict adaptation to disease.

Table 3 presents the indicators of model fit. As the fit characteristics of Table 3 show, the value of the normalized Chi-square index ( $\chi^2/df$ ) was 2.45, which indicates the fit of the model. In this study, the Root Mean Square Error of Approximation (RMSEA) was 0.08, which shows the appropriate fit of the model. Other fit indices of the model including Comparative Fit Index (CFI)=1, Adjusted Goodness of Fit Index (AGFI)=0.86, the Goodness of Fit Index (GFI)=1, and Incremental Fit Index (IFI)=1, also indicate a good fit of the model. Therefore, the research findings have an acceptable fit. This finding suggests the mediating role of the ego in spiritual experiences and adaptation to disease.

### Discussion

This study aimed to investigate the mediating role of spiritual experiences with ego strength and adaptation to dialysis. Findings showed that daily spiritual experiences could not lead to adaptation to the disease in dialysis patients. Consistent with the present study, Ashrafi and



**Figure 1.** Research model to investigate the relationship between ego strength and adaptation to disease with the mediating role of spiritual experiences



**Table 2.** Direct and indirect effects of predictor and mediator variables on disease adaptation variable

Variables		Disease Adaptation		
		Direct	Indirect	Total
Predictor	Ego strength	0.25	0.1	0.14
Mediator	Spiritual experiences	0.36	0.00	0.35



Sharifinia et al. [19, 40] also reported a low level of spiritual health in people undergoing hemodialysis treatment.

The study by McCoubrie and Davis [41] support the present study, i.e., the average total spiritual health score of people with cancer in this study was low. This discrepancy can be related to differences in the type of disease, type of treatment, culture, and opinions of people and their psychological issues.

The findings of this study are not consistent with the investigations of Jafari [42] and Besharat [22], and Sinner et al. [43]. They mentioned the use of spirituality and religion as one of the adaptation strategies in hemodialysis patients. Ramadan Khani [44] also found a positive relationship between spiritual health and hope as signs of accepting appropriate adaptation mechanisms for patients in the face of life-threatening events. Haditabar et al. [45] reported spirituality as a coping strategy that plays an essential role in the mental and physical health of patients, as a barrier to depression and frustration, and suicidal ideation; it moderates negative emotions and calms anxiety and mental turmoil in the face of life stresses. Each of these effects and consequences of spirituality can, in turn, increase the likelihood of adaptation to disease and its resulting stress. Therefore, spirituality can help the physical health and wellbeing of sick people by increasing psychological wellbeing in modulating and reducing negative emotions, depression, and despair on the one hand, and increasing mental peace and aiming for and valuing life on the other hand [22].

Spiritual experiences are a kind of adaptation and problem solving that creates internal and external harmony and integration in people. Those who use personal spiritual experiences can solve life crises and give their life meaning. Therefore, having a spiritual tendency, besides providing meaning to life, reduces maladaptive and undesirable behaviors [46]. Various studies have shown that spiritual experiences can create adaptation and tolerance of problems in people with HIV [47] and cancer [47]. People describe spirituality as a way to endure stress and feel better, which can also act as a factor in adhering to treatment [48, 49]. Having a purpose and meaning in life, a sense of belonging to the origin of the universe, and hoping for God's help in stressful life situations, are among the advantages that people with high spiritual understanding have, so they suffer less damage in the face of events and are more resilient to problems [50].

In explaining the consistency with the present study's findings, it can be said that not all beliefs, spiritual experiences, and spiritual coping strategies can be helpful in the adaptation of the disease. Research has shown that beliefs that represent spiritual struggle or punishment (for example, questioning the presence of God or believing that one's illness is a punishment for one's sins) are associated with more depression and lower quality of life [51]. Patients with chronic illnesses sometimes use negative spiritual coping strategies instead of positive ones, which reflect spiritual dissatisfaction, doubting about the presence of God, or feelings of rejection or punishment by God [51]. The type of beliefs and coping strategies used by patients with chronic diseases are important predictors of their emotional and behavioral performance.

**Table 3.** Model fit indices

Indicator	$\chi^2/df$	GFI	AGFI	CFI	IFI	RMSEA
Value	2.45	1	0.86	1	1	0.08



$\chi^2/df$ , the normalized Chi-square index; GFI: Goodness of Fit Index; AGFI: Adjusted Goodness of Fit Index; CFI: Comparative Fit Index; IFI: Incremental Fit Index; RMSEA: Root Mean Square Error of Approximation.

In a way, negative spiritual beliefs lead to more internalization and externalization of problems and low quality of life [52, 53], decrease in physical health, and increase in mortality [51], which disrupts the adaptation process to the disease. According to Namadi and Movahedpour studies [53] which supported the results of the present study, increasing age and the presence of underlying diseases reduce spiritual health and consequently the quality of life and adaptation to disease in patients. Fatemi et al. [54] also showed that the importance of spirituality was not the same for all patients. Although spirituality is an adaptation mechanism in the face of illness, it is not used in the same way in different age groups, genders, and education groups.

Another finding of the study was that ego strength could lead to adaptation to the disease, which is consistent with the research results by Besharat et al. [22] and Flannary and Smith [55]. In connection with this hypothesis, we can mention the relationship between ego strength and its mediating role in reducing perceived stress with adaptation. Ego strength is an essential variable in human performance. The term ego strength refers to a person's ability to deal effectively with competing demands and exhausting situations to function effectively in the environment despite the needs and expectations of conflicting forces. Therefore, the existence of a powerful ego makes people resist and compromise against life-threatening diseases and control the events resulting from it. In other words, ego strength leads to adaptation and psychological health of patients, and weakness of ego impairs the body's immune system.

The role of ego strength in psychological functioning and balance between different levels of personality through patient's defense mechanisms is decisive in adapting to disease to the extent that health and disease are a function of ego ability to control and deal with stress and daily events and resolve psychological and environmental challenges. Therefore, the power of individuals to cope with the disease to ego strength and its ability to overcome various pressures will cause a functional balance in the people with the diseases [56-59]. In explaining the ego's ability to adapt, we can refer to the research of Blanck and Blanck [60] and Hyphantis et al. [61].

Blanck and Blanck found that people with high IGO abilities showed high resilience and adaptability to various challenges, but people with low IGO abilities showed weakness in tolerating anxiety. Hyphantis et al. examined patients with multiple sclerosis and reported that weakness in the ego strength led to maladaptive and underdeveloped defenses. The ego is the core of the per-

sonality, which with the growth of competence, acquires an increasing ability to solve psychological and environmental challenges, to the extent that our ability to cope with life depends on ego strength and its ability to overcome the various pressures it exerts on it.

To explain this finding, it can be said that the primary function of ego strength is to provide internal and interpersonal facilities to cope with environmental stresses and demands. Accordingly, ego strength can help patients in dialysis therapy better adapt to the disease and recover by providing more effective coping strategies and more mature defense mechanisms. In other words, having a strong ego makes a person less likely to show signs of psychological harm and to have enough and sufficient capacity against the stresses caused by chronic diseases. Ego strength plays a vital role in predicting health and adherence to treatment in chronic conditions [31], and people who have higher levels of ego strength recover more and faster than people who have less ego strength because of a sense of self-sufficiency, as well as the power to manage their daily affairs during treatment. Higher levels of ego strength lead to positive emotional experience, increased self-confidence, and psychological adjustment. It is a source of internal control and positive coping strategies in patients [38, 62].

This study showed that daily spiritual experiences could not mediate between ego power and adaptation to disease. This finding is consistent with the research of Hosseini et al. [63] on the relationship between spiritual experiences and self-control. Still, it is inconsistent with the studies of Besharat et al. [22], Hussein Khanzadeh and Sahebalzamani et al. [64, 65], on the orientation of spirituality and inner beliefs on self-control of sick people. It is also inconsistent with the results of research by Rippentropa et al. [66] on the relationship between religion/spirituality and physical health, mental health, and pain in people with chronic pain. In line with these findings, people with higher ego and strength of self-control, despite being motivated to act, control their behaviors, feelings, and instincts, think about the choices and possible consequences of their behavior and then make the best choice [67].

With regard to ego strength and spiritual health, people with high spiritual health, along with adhering to their spiritual values and inner beliefs, before doing something, try to think about it patiently. With foresight and conscious judgment, which is one of the characteristics of the ego, they examine all aspects of the problem and make the best decision by reviewing the contemplative reactions in response to external and internal stimuli.

Therefore, spiritual experiences by strengthening the mental function and adaptation of the individual while promoting other aspects of health in times of crisis are a powerful resource that prevents physical and psychological stress on the patient, encourages healthy behaviors, and improves overall health [48]. In examining the consistency of the study findings, although no direct research has been done on the topic of discussion or little field research has been done, based on the research literature, this result can be justified.

The individual's spiritual experiences with ego strength have a positive and meaningful relationship with the defense mechanisms to deal with and adapt to stressful situations. Based on the hierarchical classification of defense mechanisms, ego mechanisms are divided into three categories: mature, neurotic, and immature. Mature defense mechanisms are adaptive, normal, and efficient confrontation. But neurotic and immature defense mechanisms are not adaptive and efficient coping methods. Therefore, spiritual intelligence and experiences only by strengthening the developed defense mechanisms provide this possibility for the individual. In the face of stressful situations, the person can use them to deal with stressors [68]. Many studies show the relationship between immature defense styles with negative health symptoms and more mental and physical problems and a positive relationship between the mature defense mechanisms and health and adaptation. The personality and cultural characteristics of people affected by this disease affect the choice of defense mechanisms of people with dialysis. This is an influential factor in confirming the consistency with the present study's findings in lacking a relationship with the mediating role of spiritual experiences with ego strength [69]. Therefore, subsequent research studies need further studies in the field of personality and cultural characteristics of patients and the role of defense mechanisms with the mediating part of spiritual experiences with these variables.

On the other hand, spiritual and religious beliefs affect how people interpret events and facilitate the process of adaptation and acceptance of events. In contrast, low daily spiritual experiences lead to a person without the ability to give meaning to life and provide a reference for interpreting the phenomena and events around it. When a person considers himself separated from existence and absolute power, he cannot show purposeful and healthy activities and uses spiritual resources to deal with the pain caused by having a chronic illness. As a result, ego strength cannot demonstrate its functions, such as emotion regulation, defense mechanisms, and effective coping strategies [51].

## Conclusion

According to the research findings, ego strength can predict adaptation to disease in dialysis patients, but daily spiritual experiences cannot adapt to disease in dialysis patients. Considering that the data were collected from dialysis patients referred to one of the hospitals in Shiraz, caution should be exercised in generalizing it to other areas and other patients with chronic diseases. To better generalize the results, it is recommended to study other communities and different diseases. It is suggested that to increase and improve adaptation to the disease in dialysis patients. Interventions should be made to train ego strength better to manage the disease and its psychological and social consequences. Also, considering the educability of individuals in terms of spiritual intelligence, it is suggested that educational programs be developed to moderate negative religious beliefs, including the feeling of being punished by God, questioning God's power and love, and increasing daily spiritual experiences.

## Ethical Considerations

### Compliance with ethical guidelines

The participants were informed of the purpose of the research and its implementation stages. A written consent has been obtained from the subjects. They were also assured about the confidentiality of their information and were free to leave the study whenever they wished, and if desired, the research results would be available to them. The Helsinki Convention was also observed.

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### Authors' contributions

All authors equally contributed to preparing this article.

### Conflict of interest

The authors declared no conflict of interest.

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