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Research Paper

The Relationship Between Spiritual Needs, Adherence to Refills, and Medications in Patients With Coronary Artery Disease

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ABSTRACT

Background and Aim: Coronary artery disease is recognized as a major cause of mortality and an important health priority worldwide. The patient's adherence to the treatment regimen is one of the important factors in disease control. Many patients do not adhere to the treatment and ignore the physician's instructions. Spiritual needs can affect adherence to a patient's treatment. This study was conducted to determine the spiritual needs and their relationship with adherence to refill and medication in patients with coronary artery disease.

Materials and Methods: This descriptive-analytical cross-sectional study was conducted in 2017 in Qom, Iran. In this study, 100 patients with coronary artery disease hospitalized in Qom educational hospitals were selected by convenience sampling method. The required information was collected via interview using four questionnaires of demographic characteristics, spiritual needs questionnaire, hospital anxiety and depression scale, and adherence to treatment regimen questionnaire. Finally, the data were analyzed using SPSS software version 22.

Results: The Mean±SD spiritual needs in the elderly was 44.65±12.18 and 30% of patients had adherence to refill the average. The results of multiple regression analysis showed that two variables of depression (P=0.012; β=-0.37) and active/productive forgiveness (P=0.007; β=0.41) were significantly associated with adherence to the treatment regimen among the variables included in the model.

Conclusion: The results of this study showed that spiritual needs have a significant relationship with adherence to refill. Also, depression is an important predictor of adherence to refill and healthcare providers need to pay attention to the role of these factors in improving adherence to patients› treatment regimens.

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Journal of Vessels and Circulation
Qom University of Medical Sciences

1. Introduction

Coronary artery disease is one of the most serious problems related to health and disability factors in developed and developing countries [1, 2] and the most common chronic life-threatening disease with an increasing prevalence and mortality in Iran [3]. It is predicted that the mortalities caused by this disease reach 44.8% by 2030 [4]. This disease is significant because of its high prevalence, but the point that increases its importance is that many patients do not adhere to the treatment and ignore the physician's instructions. Adherence to medication regimens and following medical recommendations is one of the significant concerns of the treatment team [5]. Adherence to a treatment regimen is a range of behaviors of an individual that is in accordance with the recommendations provided by health care providers in the field of adherence to the treatment regimen [6]. The World Health Organization defines adherence for use in chronic diseases as the extent of a person's behavior, including diet, medication, or lifestyle change, in accordance with the recommendations of healthcare personnel [7].

Lack of adherence to long-term treatments in chronic diseases is estimated on average 50%, which has a significant health burden for people in developed countries [8]. According to research in this area, if patients do not obey these recommendations, they are exposed to more severe complications, and this lack of adherence can have dangerous consequences for them [5]. In fact, poor drug adherence can progress complications and diseases, increase treatment costs, reduce functional abilities and quality of life, increase the use of expensive specialized medical resources, unnecessary drug changes, and increase hospitalization [9].

There are reasons for non-adherence to refill including forgetfulness, lack of motivation to change behavior, religious considerations, and insignificance of medication [10-12]. In fact, participation and acceptance of responsibility by the patient is an important principle of adherence [12]. If the patient is not motivated and does not believe in his abilities to improve his health by changing his behavior, it will not be practical to achieve this issue [13]. Also, among the factors that can be effective in improving drug adherence are: improving the quality of the patient-physician relationship, patient support, support of healthcare team members from the patient, building self-confidence, patient satisfaction with treatment, and helping him be more active [14, 15].

Also, spiritual needs may affect adherence to the patient›s treatment [16]. Heart attack in these patients due to the life threatening and stressful nature causes the spiritual dimension to be more prominent in them [17]. In fact, one of the components of a healthy life is paying attention to spiritual needs. Spiritual needs are one of the deepest human needs with their identification and provision having a special position in promoting health and developing responses to disease [18]. Stallwood and Stoll (1975) define spiritual needs as «any factor that is necessary to establish or maintain a dynamic relationship of a person with God or higher power, to experience love, hope, trust, meaning, and purpose in life.» [19]. Spiritual needs guide man to achieve a peaceful and divine life, and also form the person›s personality and its ultimate goal by satisfying those needs to reach God›s nearness and perfection, for example, «remembrance of God» is considered a spiritual need that causes peace of mind. It is significant to identify spiritual needs so that assessing the patient›s spirituality and spiritual needs is essential for providing effective spiritual services [20].

There are factors that lead to a negative impact on the recovery, prolonged hospitalization, and increased medical costs including anxiety caused by separation from the religious community and failure to perform one›s duty to God and people [21]. On the other hand, most patients want their spiritual and religious needs to be met [21], and understanding the religious needs by mental health professionals will promote the patient›s spiritual values and combine them in the patient›s medical evaluation [22]. A study showed that the underlying disease has an important relationship with the spiritual needs of patients [23]. Also, the results of a global study by colleagues in Tehran indicated that spiritual health has a significant relationship with the quality of life of patients with coronary artery disease and spiritual health improves the quality of life [2]. Based on the results of a study conducted on heart transplant patients, patients who participate in religious activities have a better position in terms of post-treatment follow-up programs and physical function, anxiety, and self-confidence [24] and these spiritual beliefs increase patients› adherence to the treatment regimen by creating a sense of purposefulness [25].

Since adherence to refill and medication is an important challenge in patients with chronic diseases, lack of adherence to the treatment plans will have consequences such as recurrence and the need to be hospitalized [26]. This article can increase spiritual needs and factors related to existing knowledge via the study of adherence to refill and medication, hence; it was conducted to determine the spiritual needs and their relationship with adherence

to refill and medication in patients with coronary artery disease to provide the path for further research.

2. Materials and Methods

This descriptive-analytical cross-sectional study was conducted in 2017 in Qom. The study population includes all patients with coronary artery disease admitted to Shahid Beheshti and Kamkar hospitals in Qom. A total of 100 patients with coronary artery disease in the mentioned hospitals were selected by convenience sampling method. The inclusion criteria included the absence of cognitive problems, known chronic disease, the ability to communicate in Persian, and consent to participate in the study, and the exclusion criteria included the lack of full participation in completing the questionnaire. Informed consent was obtained from all selected patients to participate in the study. A license was obtained from the Deputy for Research of Qom University of Medical Sciences and presented to the officials of educational and medical centers; the necessary permits were then obtained to conduct the study. The questionnaire was referred to the mentioned units and was completed after stating the purpose of the study. If the patient was unable to complete the questionnaire due to illiteracy, the questions were read and answered by the researcher. To complete the required information, the patient's clinical records were examined in coordination with the officials of the ward.

The necessary information in the present study was collected using four questionnaires and via interview. The 1st questionnaire was related to demographic characteristics of individuals including age, sex, level of education, marital status, residence status, employment status, smoking history, underlying disease, and duration of diagnosis. The 2nd questionnaire was the spiritual need questionnaire used to assess spiritual needs. This questionnaire was designed by Büssing et al. in 2010 for diagnostic and research use. This questionnaire can be used both as a diagnostic tool with 27 propositions and as a research tool with 19 propositions (some of which are optional), the full version was considered in this study. This questionnaire consists of four different factors:

1. Religious (alpha=0.90): This factor includes praying for others and with others and by themselves, participating in religious ceremonies, reading spiritual/religious books, and facing a superior existence (such as God, angels, etc.).

2. Inner peace (alpha=0.83): This factor includes the desire to live in quiet places, immerse yourself in the beauty of nature, gain inner peace, talk to others about fears and worries, and love and affection of others (to the person).

3. Existential (deep thinking/meaning) (alpha=0.84): This factor includes thinking about the past life, talking to someone about the meaning of life/suffering, revealing aspects of life, talking about the possibility of another life after death, and so on.

4. Active/productive forgiveness (alpha=0.82): This factor includes having an active or automatic intention to comfort others, transferring life experiences to others, and ensuring that your life has been meaningful and valuable [27].

The validity and reliability of the Persian version of the questionnaire has been confirmed by the researcher [28]. The 3rd questionnaire was the hospital anxiety and depression scale (HADS), which measured patients› anxiety and depression. This tool has 14 items that examine seven items of anxiety and seven items of depression. Each item is scored on a 4 Likert-point scale (almost never=zero, sometimes=1, most of the time=2, and almost always=3). Finally, out of a total of 21 points in each section, the score higher than eight in each section is considered as the presence of anxiety and depression. The validity and reliability of the Persian version was also confirmed [29].

The 4th section of the adherence to refills and medication questionnaire was designed by Kripalani et al. in 2009 examining the adherence to refills and medication in patients with chronic conditions. This questionnaire consists of 12 items that examine 2 subscales of adherence to refill and medication. Adherence to refill subscale includes 8 phrases, the medication sub-scale includes 4 phrases, and there are 4 options in front of each phrase based on a 4-point Likert rating from always to never. The possible range for the total score of the tool is 12 to 48. Lower scores indicate higher adherence. Scores can be analyzed both on a continuous scale and in two modes, i.e 12 or <12. The validity and reliability of the original and Persian versions of this questionnaire have been confirmed [30, 31].

Data analysis was performed using SPSS software version 22. Mean±SD, percentage, and frequency were used to describe the overall score of spiritual needs and its items, adherence to refill, and the score of depression and anxiety scale. Multiple regression analysis was used to determine the predictive variables of adherence to refill and medication. The overall score of adherence to refill was considered a dependent variable and the scores re-

Journal of Vessels and Circulation
Qom University of Medical Sciences

lated to demographic, spiritual, and psychological needs were considered as independent variables. Significance levels in all statistical tests were considered less than 0.05.

3. Results

The results of the current study showed that the Mean±SD age was 62.4±5.2. There were 51 female and 49 male participants. Most participants (72%) were illiterate and married (71%) and 83 people lived in their own homes. Only 29 people were employed and the rest were retired or unemployed and 17% of participants had a history of smoking. The Mean±SD disease duration was reported 8.58±8.02 years.

The Mean±SD of the score of spiritual needs in the elderly was 44.65±12.18. The highest score was related to the item of asking God for help with a Mean±SD 2.31±0.76 and the lowest score was related to the item of talking to others about life after death with a Mean±SD 0.66±0.98. Also, the Mean±SD of depression and anxiety scores were 11.67±3.76 and 11.67±3.33, respectively. Among the patients, 81% had anxiety and 62% had moderate to high depression. The Mean±SD of adherence to refill scores were 3.46±11.67 with a range of changes of 7-25. Table 1 illustrates the descriptive findings related to research variables and their subscales.

The duration of the disease and the times of illnesses had a significant negative relationship with spiritual needs (P<0.01; r=0.36). Also, the average religious dimension of spiritual needs in men was significantly higher than women according to the results of the independent t-test (P<0.05, t=1.48). The results of a one-way analysis of variance showed that married people reported significantly higher religious needs compared to widows or divorced people (P<0.05, F=2.64).

Table 2 illustrates the correlation between spiritual needs and their components with adherence to refill. There was a significant relationship between spiritual needs and adherence to refill.

According to the results of multiple linear regression analysis, the correlation coefficient of regression

Table 1. Mean±SD of research variables of patients

Sub-scales	Mean±SD	Min–Max
Religious needs	11.82±3.32	2-18
Inner peace	4.69±3.28	0-12
Existential needs	7.75±2.88	0-13
Active/productive forgiveness	7.03±3.03	0-12
Adherence to refill and mediation	11.67±3.46	7-25

Journal of Vessels and Circulation
Qom University of Medical Sciences

Table 2. Correlation between spiritual needs and its components with adherence to refill

Sub-scales	Religious	Inner Peace	Existential	Active/Productive Forgiveness	Spiritual Needs	Adherence to Refill
Religious needs	1					
Inner peace	0.52**	1				
Existential needs	0.36**	0.30**	1			
Active/productive forgiveness	0.61**	0.53**	0.53**	1		
Spiritual needs	0.83**	0.7**	0.65**	0.82**	1	
Adherence to refill	0.10	0.18	0.12	0.28**	0.22*	1

** P<0.01, * P<0.05

Journal of Vessels and Circulation
Qom University of Medical Sciences

Table 3. Regression analysis of the components of spiritual needs in explaining adherence to the treatment regimen

Variables	Unstandardized Coefficients		Standardized Coefficients	t	P
	B	Std. Error	Beta		
Religious needs	-0.08	0.14	-0.08	-0.57	0.569
Inner peace	0.07	0.13	0.07	0.54	0.586
Existential needs	-0.06	0.15	-0.05	-0.45	0.653
Active/productive forgiveness	0.47	0.17	0.41	2.75	0.007
Anxiety	0.13	0.14	0.13	0.96	0.336
Depression	-0.34	0.13	-0.37	-2.58	0.012
Constant' Fix value	11.58	1.80	--	6.41	0.001

of different dimensions of spiritual needs with adherence to refill in patients was equal to 0.39 and was significant at the level of 0.0001. The results of multiple regression analysis indicated that two variables of depression (P=0.012; β=-0.37) and active/productive forgiveness (P=0.007; β=0.41) was significantly associated with adherence to refill among the variables included in the model (Table 3).

4. Discussion

This study was conducted to determine the spiritual needs and their relationship to adherence to refill and medication in patients with coronary artery disease. According to the results of the study, all patients reported at least one spiritual need, and the highest score of spiritual needs was related to the item of asking God for help. To justify this finding, religion and spirituality can meet the psychological needs of the elderly and help them to face death more easily, to feel meaningful in life, and accept the inevitable shortcomings of old age [32]. In the study conducted by Qahramaniyan et al., the majority of patients with cancer expressed their main spiritual desires to God, thinking of God, trusting in God, observing the happiness of others, "striving to live with the disease, and the need for kindness and helping others [33]. In the study conducted by Höcker et al., the need for inner peace and active/productive forgiveness was the most significant [34].

The results showed that there was a significant relationship between the need for forgiveness and adherence to refill. The study conducted by Valerie U Oji et al. showed that spiritual interventions can have positive effects on health and lead to improved adherence to refill [35]. The study conducted by Dalmida et al. indicated that praying at least once a day in AIDS patients can lead to 90% adherence to antiretroviral therapy [36]. In this regard, some studies have shown that spirituality can have a positive effect on self-esteem, well-being, and self-care, and in fact, it may be a bridge to overcome barriers to care, including distrust of the health care system [37, 38]. The result of the study conducted by Javanmardifar et al. indicated that spiritual well-being was directly related to hope and life satisfaction, but spiritual well-being was inversely related to adherence to the treatment regimen [38]. The results achieved by a review are consistent with the results of this study and show that spiritual and religious beliefs are associated with adherence to medication regimes [39]. Another study showed a significant positive relationship between spirituality and adherence to refill. In fact, spirituality can provide fundamental support in the management of treatment [38]. Jim et al. stated that increasing patients' spiritual well-being increases their faith in the treatment and consequently, gives them hope for recovery [40].

The results indicated that depression is one of the important predictors of adherence to refill and the status of following care instructions is associated with depression. In this regard, the results of the study conducted by Omranifard et al. indicated that there was a significant relationship between cooperation and the depression of the patient, which decreased with the increase of depression [41]. Therefore, the occurrence of psychological problems including depression and anxiety can lead to non-adherence to treatment in patients.

This study also had some limitations, including being cross-sectional that did not provide the cause-and-effect relationship between variables, and data collection and self-report cognitive status analysis that may

Journal of Vessels and Circulation
Qom University of Medical Sciences

not reflect individuals' actual performance. Also, non-random sampling and limited sample size in this study reduce the generalizability of the findings. Conducting this study with a larger sample size can be effective in promoting this limitation.

5. Conclusion

The findings of this study confirmed the role of spiritual needs and depression on the level of adherence to treatment of n patients with coronary artery disease. It is suggested that spiritual needs and depression be considered in interventions to identify and address holistic care in this patient populations. More research is warranted to understand the role of spirituality in medication adherence in chronic conditions

Ethical Considerations

Compliance with ethical guidelines

The questionnaire was completed after explaining the objectives of the study, obtaining the patient's informed consent, ensuring the confidentiality of the information, and also announcing the full readiness of patients. This article is the result of a part of a research project that has been approved and financially supported by the Deputy for Research of Qom University of Medical Sciences (Code: MUQ.IR 86.1395.REC).

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Authors' contributions

All authors equally contributed to preparing this article.

Conflict of interest

All authors declare no conflict of interest.

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