



# The Relationship Between Spirituality and Mental Health in HIV-Positive Patients: A Cross-Sectional Study

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## Abstract

**Objectives:** AIDS is among chronic disorders that severely affects the individuals' physical and mental health. Considering the importance of spirituality in counteracting the stress arising from chronic diseases and accepting the disease, our study aimed to determine the relationship between spirituality and mental health in HIV-positive patients who referred to the Behavioral Disorders Center in Tabriz, Iran.

**Materials and Methods:** This descriptive analytic cross-sectional research was conducted on 81 HIV-positive patients referred to behavioral disorders center of Tabriz, Iran in 2017 using the census method. The instruments used in this study included socio-demographic characteristics questionnaire, Parsian and Dunning's spirituality questionnaire, and General Health Questionnaire-28 (GHQ-28). Data analysis was carried out through independent *t* test, one-way ANOVA, Pearson correlation coefficient, and multiple linear regressions.

**Results:** The mean (SD) of the overall mental health score was 36.0 (16.4) (range: 0-84). Two-thirds of the patients suffered from mental health disorder; mean (SD) of overall spirituality score in people suffering from positive HIV was 89.0 (15.3) (range: 29-116). The relationship between the total score of spirituality and overall mental health and its sub-domains was significant ( $P < 0.05$ ). Self-awareness was the only mental health predictor.

**Conclusions:** A considerable percentage of people with HIV suffer from mental health disorders. Regarding the positive relationship between spirituality and all mental health sub-domains, strengthening spirituality can lead to the promotion of mental health in these patients.

**Keywords:** HIV seropositivity, Mental health, Spirituality.

## Introduction

Acquired Immunodeficiency Syndrome (AIDS) is a kind of immune system disease which develops by human immunodeficiency virus (HIV) (1). AIDS can impair the body's ability to fight infections and diseases and ultimately can lead to death. Despite significant achievements in combating AIDS, and thus reducing the new infection and also mortality rates of AIDS-related illnesses, its negative effects on society and the workplace is significant (2,3). AIDS is a very profound human tragedy that has been described as the unannounced deadliest war in the world (4).

By the end of 2017, about 36.9 million people globally were living with HIV, while 1.8 million of them were newly infected ones. Nearly, 940 000 people worldwide died from HIV-related illnesses in 2017 (5). The prevalence of HIV in Iran is low among the general population (around 0.08%), but its prevalence among injecting drug users is reported to be 13.8%. However, since the beginning of 2001,

successful measures were taken to control the epidemic among injecting drug users, which resulted in a decline in its prevalence in this population group. However, the main cause of the spread of epidemics in Iran is the use of injectable drugs (6).

AIDS is mainly transmitted through unprotected sexual intercourse, contaminated blood transfusion, infected needle, and from mother to child during pregnancy, childbirth, and breastfeeding (7). AIDS is one of the chronic disorders that greatly affect physical and mental health, and so results in mood and anxiety disorders especially depression and substance dependency. Anxiety and use of drugs are among the factors that reduce the adherence of patients to antiretroviral treatments that act as the key to HIV treatment success (8).

Mental health is a major aspect of public health. According to the WHO definition, health or well-being refers to the full physical, psychological and social health and not just the absence of illness and inability.

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Mental health moves beyond the absence of mental and psychological diseases. Person's feeling of self-control over life is among the mental health components, in other words, the flexibility through which mental resistance is created against mental disorders in the adversities of life (9).

The relationship between mental health and spirituality has received attention by psychologists in recent years. Based on the studies, spirituality has a significant impact on somatic and psychic health. Spirituality is a personal concept that includes an individual's attitudes and his/her belief in God (10). For many people, spiritual and religious activities create peace in the patient in the face of diseases (11,12). Now, the role of spirituality on human health and disease is of great interest. WHO describes it in four physical, mental, social and spiritual dimensions (13,14). In the study by Vance et al, it has been shown that in the elderly people with HIV, religious and spiritual resources can be considered as a source to counteract the regret, depression and anger caused by the complications of the disease (15). The results of the studies showed that the use of spiritual interventions in healthcare facilitates the access to psychological well-being and coping with the disease in the patients with HIV-positive (16,17). The results of another study about the impacts of spiritual beliefs on improving the health of 35 patients with chronic diseases in Tehran, Iran, showed that spiritual beliefs not only facilitate the adaptation of patients to the adverse psychosocial effects of chronic diseases but also decrease depression symptoms and increase their satisfaction with their lives (18).

Regarding the negative psychological effects of chronic diseases, in order to relieve the depression of these patients and improve their psychic health, heightening life satisfaction and increasing the power of coping with the disease are of great importance. The importance of this research is to link spirituality with the mental health in patients with AIDS which is regarded as one of the most common chronic diseases of the present century. Despite the increasing prevalence of HIV among people in Iran, there is a lack of adequate training and support for these infected people. Considering the fact that being affected by HIV is among the most significant crises in lifetime that is involved in the occurrence of psychological problems such as depression, and with regard to the role of spirituality in dealing with the stress caused by chronic diseases and admission of the disease, and on the other hand, since based on searches conducted by the researcher, no studies have been carried out on the association between spirituality and mental health of these patients in Iran, studying the association of spirituality and mental health is necessary in HIV-positive subjects. Therefore, this study aimed to evaluate the relationships between spirituality and mental health in HIV positive subjects who referred to the behavioral disorder center in Tabriz, Iran.

## Materials and Methods

### Study Design and Participants

The present study is a descriptive analytic cross-sectional survey conducted through the census method on all HIV-positive patients referred to behavioral disorders center of Tabriz, Iran. East Azerbaijan Province has 19 behavioral disorders counseling centers. The research center in this study is the only referral center for behavioral disorders in Tabriz. Therefore, the sampling was indispensable by census method and the sample size was based on the census during the study. The inclusion criteria were as follows: being HIV-positive, having a medical record at the behavioral disorders center, having a desire to participate in the study, and believing in one of the official religions of the country. Having a history of mental diseases as reported by the participant was among the exclusion criteria. The samples included 101 patients with a medical record in the center. Twenty of them were not willing to cooperate because of personal reasons, so the study was conducted on 81 participants.

### Sampling

After obtaining the ethical approval from the Ethics Committee of Tabriz University of Medical Sciences, the study was conducted in coordination with the officials of the behavioral disorders center in Tabriz. The subjects were first evaluated in terms of basic information, inclusion and exclusion criteria, and once were qualified for the research, they were provided with information about the research. Information confidentiality was explained to the subjects and then, they were invited to participate and in case of willingness, an informed written consent was obtained from each participant. Then, the socio-demographic characteristics questionnaire, Parsian and Dunning's spirituality questionnaire (10), and the General Health Questionnaire-28 (GHQ-28) (19) were completed. In order to cooperate better, the participants in the study did not write their names in the questionnaires, and the coded questionnaires were completed by the participants and after completion, they were put in a closed box.

### Measures

The data collecting tool in this study was a questionnaire consisting of 3 parts:

1. The socio-demographic characteristics questionnaire: This questionnaire included questions about gender, marital status, age, education level, and information related to the disease.
2. Spirituality inventory developed by Parsian and Dunning in 2009 assessed the significance of spirituality in the lives of individuals and measured their various dimensions. This scale is a self-report inventory, and the subject must specify a degree of disagreement or agreement with each of these phrases on a 4-point Likert scale (ranging between "I completely disagree = 1" and "I completely agree = 4").

The questionnaire has 29 phrases and consists of 4 sub-scales of self-awareness (10 phrases), the importance of spiritual beliefs (4 phrases), spiritual practices (6 phrases), and spiritual needs (9 phrases). Higher scores indicate higher spirituality (20). Spirituality questionnaire has undergone a psychometric test in Iran, and Cronbach's alpha coefficients of the whole tool, self-awareness subscale, the importance of moral beliefs, spiritual practices, and spiritual needs were 0.90, 0.84, 0.90, 0.77 and 0.82, respectively (20).

3. General Health Questionnaire (GHQ-28): This questionnaire is used in clinical trials to track people with mental disorders. This questionnaire consists of 28 items and can be used by all people. The questionnaire has four sub-factors and each sub-scale consists of 7 questions (19). The subject specifies his/her response rate to each of those phrases on a 4-point Likert scale (ranging between never = 0 and more than usual = 3). The first sub-scale (GHQ-A) involves somatic symptoms, including items concerning individuals' feelings about their health and their tiredness. The second sub-scale (GHQ-B) includes items concerning anxiety and insomnia, and the third sub-scale (GHQ-C) shows social dysfunction and the fourth sub-scale (GHQ-D) shows the level of severe depression of individuals. People with a total score of over 24 have mental health problems and the lower the score, the higher the mental health. The range of scores for the entire questionnaire is 0-84 and 0-21 for each of the sub-scales. In addition, the cut-off point is considered to be 24 for the entire questionnaire and 5 for each of the sub-scales (19). In Iran, the validity of the GHQ-28 has been measured by Janbozorgi et al on 223 students, and the Cronbach's alpha coefficient is calculated as 0.49 (21).

In this study, the validity of the tool was tested through face and content validity for personal-social information and the disease-related information. Likewise, the questionnaires were given to 10 academic staff of Tabriz University of Medical Sciences in relevant fields for further study. After using their corrective comments, the necessary modifications were made in the final forms. In addition, by conducting pretrial and retrial on 10 participants in a two-week interval, the reliability was obtained in two dimensions of repeatability (ICC = Intra-class correlation coefficient) and internal consistency (Cronbach  $\alpha$  coefficient). The ICC (95% confidence interval) and Cronbach  $\alpha$  for spirituality were obtained as 0.98 (0.96-0.99) and 0.83, respectively, and for mental health, they were 0.97 (0.94-0.98) and 0.80, respectively.

#### Data Analysis

The questionnaires were completed and then the data were analyzed using SPSS version 21.0. Descriptive and analytical statistics were used for analyzing the findings. We examined the normal distribution of quantitative

data using Kolmogorov-Smirnov test, indicating that all data were normal. In order to describe spirituality and mental health, descriptive statistics including frequency distribution and percentage were used. In addition, central and dispersion indicators such as mean and standard deviation were used.

Bivariate statistical tests such as Pearson correlation coefficient, independent *t*-test, and one-way ANOVA were used to analyze the relationship between spirituality and socio-demographic characteristics with mental health. We estimated the effect of each independent variable (spirituality and socio-demographic characteristics) on the dependent variable (mental health). The independent variables with *P* value <0.1 in the bivariate analysis were entered into the multivariate linear regression model through the backward strategy in order to control confounders. Before multivariate analysis, the regression assumptions such as normality of residuals, co-linearity, outliers, and independence of residuals were examined.

#### Results

The results of socio-demographic characteristics questionnaire showed that around half of the participants (46.8%) were in the age group 31-40 years, and over half of the subjects (69.1%) were male. About half of them (46.9%) were married. More than one-third of the participants (35%) had finished secondary school, and about half of them (42.9%) were housekeepers, and more than two-thirds (65.8%) of them reported insufficient income. Less than half of the participants (40%) reported being exposed to HIV due to needle injuries. Over half of the participants (58.9%) reported using condoms in their sexual relations. And about half (52.5%) had a history of imprisonment. Based on the results of bivariate tests, only the relationship between the variable of monthly income adequacy and mental health score was significant (Table 1).

The mean (standard deviation) of the overall score of spirituality in HIV-positive subjects was 89.04 (15.33) (range: 29-116). Among the dimensions related to spirituality, the highest mean scores were related to sub-domains of spiritual needs (79.70) and the importance of spiritual beliefs (79.0), and the lowest mean scores were related to sub-domains of self-awareness (74.57) and spiritual practices (74.62) (Table 2).

The mean (SD) of the overall mental health score in HIV-positive subjects was 36.0 (16.4) (range: 0-84) and 66.7% of them had mental health disorders. Among the mental health dimensions, the highest mean score in the sub-domain of social dysfunction was 11.8 (4.2), and the lowest score in the severe depression dimension was 6.8 (6.58). Moreover, the mean scores in the dimension of anxiety and insomnia and somatic symptoms were 8.6 (5.6) and 9.5 (5.3), respectively. Pearson's correlation coefficient showed a significant correlation between the total score of spirituality and mental health ( $P < 0.001$ ).

**Table 1.** Sociodemographic and Disease Characteristics and their Relationship with the Total Score of Mental Health in HIV-positive Subjects (n = 81)

Sociodemographic Characteristics	No. (%)	Mental Health Mean (SD)	P Value
Age			0.229 <sup>a</sup>
17-30	10 (12.7)	39.71 (13.06)	
31-40	37 (46.8)	34.18 (15.30)	
41-50	21 (26.6)	33.22 (20.40)	
More than 50	11 (13.9)	25.36 (9.66)	
Gender			0.082 <sup>b</sup>
Female	25 (30.9)	37.92 (15.41)	
Male	56 (69.1)	31.17 (16.14)	
Marital status			0.743 <sup>a</sup>
Single	21 (25.9)	34.14 (15.41)	
Married	38 (46.9)	32.33 (17.22)	
Divorced	10 (12.3)	35.11 (18.35)	
Widow	12 (14.8)	33.06 (13.40)	
Cause of infection			0.299 <sup>a</sup>
Blood transition	3 (3.8)	29 (13.52)	
Having contact with needle	32 (40)	31.65 (14.12)	
Sexual relationship	25 (31.3)	133.88 (17.02)	
Don't know	14 (17.5)	37.24 (19.63)	
Other	6 (7.6)	31.66 (12.70)	
Injection			0.727 <sup>b</sup>
Yes	37 (46.3)	33.93 (14.90)	
No	43 (53.8)	32.65 (17.45)	
Education level			0.631 <sup>c</sup>
Illiterate	9 (11.3)	35.68 (15.64)	
Primary	20 (25)	32.73 (17.70)	
Secondary	28 (35)	36.17 (15.44)	
High school	6 (7.5)	23.77 (11.74)	
Diploma	11 (13.8)	32 (20.71)	
University	6 (7.5)	29.39 (9.87)	
Occupation			0.207 <sup>a</sup>
Worker	13 (16.9)	34.06 (22.35)	
Employee	2 (2.6)	26.35 (9.40)	
House keeper	33 (42.9)	37.36 (15.38)	
Private sector	29 (37.7)	61 (8.41)	
Income			0.003 <sup>c</sup>
Insufficient	52 (65.8)	39.81 (16.19)	
Sufficient and somehow sufficient	27 (34.2)	28.25 (14.74)	
Use of condom			0.743 <sup>b</sup>
Yes	43 (58.9)	33.38 (16.66)	
No	30 (41.1)	38.82 (16.37)	
History of imprisonment			0.411 <sup>**</sup>
Yes	42 (52.5)	40.16 (15.52)	
No	38 (47.5)	32.20 (15.94)	
Having the disease			0.009 <sup>b</sup>
Active	50 (73.5)	39.74 (15.36)	
Inactive	18 (26.5)	28.40 (15.12)	

<sup>a</sup> Chi square test; <sup>b</sup> Fisher exact test; <sup>c</sup> Linear by linear chi-square.

Moreover, there were significant correlations between the total score of spirituality and all mental health sub-domains ( $P < 0.05$ ) (Table 3). According to the results of a multivariate linear regression test, self-awareness was alone the predictive variable of mental health in women, which, in general, accounted for 44% of the variances observed in the overall mental health score (Table 4).

## Discussion

According to the findings, the mean of total score of spirituality in HIV positive subjects was above average. Among the dimensions concerning spirituality in HIV-positive subjects, the highest score belonged to the dimension of spiritual needs. The mean of overall mental health score in HIV positive subjects was higher than the cut-off point, and two-thirds of them had mental health disorders. Meanwhile, the relationship between the overall score of spirituality and overall mental health and all sub-domains of it was significant. Self-awareness was the only predictor of mental health.

In recent years, there has been extended research on how religion and spirituality affect various aspects of physical and mental health. Some studies have indicated that spirituality has a significant relationship with the overall health of people, so religion and spirituality are the main resources for adapting to the stressful events of life. In fact, spirituality on the one hand affects mood and mental well-being and on the other hand improves their physical conditions (22) and increases the ability of the patient to cope with a disease and speeds up the rate of recovery (23). Disabling and chronic diseases make the individual face challenges regarding the sense of meaning and purpose in life (24). The studies performed by Johnson (25), Litwinczuk and Groh (26), and McNulty et al (27) implied the relationship between spirituality and physical and mental health, and also adaptation to the disease which is consistent with the results of this study.

Patients with chronic diseases, including AIDS, constantly live with uncertainty and hesitation, and this can affect their lives in physical, social, spiritual, mental, and economic dimensions (28). This uncertainty is accompanied by increased mood disorders, decreased quality of life, and reduced adaptability of affected ones. Peterson et al pointed out in their study that the role of hope and spirituality in patients with AIDS is vital (29). The findings of the survey by Cotton et al in 2006 showed that AIDS patients rely on their religious beliefs to adapt to the disease, and those with more spiritual and religious beliefs are more self-confident, more optimistic, and more satisfied with their lives, and their alcohol consumption is low (17) which are in accordance with the results of the current study. The traditional definition of spirituality emphasizes religion and religious beliefs, while in recent years, spirituality has been defined more broadly and integrates all aspects of human life (17).

The results of a study by Pirasteh Motlag and Nikmanesh



**Table 2.** The Scores of Spirituality and its Sub-domains in HIV-Positive Individuals (n = 81)

Spirituality	Mean	SD	Score Based on Percent	Obtained Scores	Obtainable Scores
Total score of spirituality	89.04	15.33	76.76	46.2-115.0	29-116
Self-awareness	29.83	6.40	74.57	12.0-40.0	10-40
Importance of spiritual beliefs	12.72	3.15	79.0	4.0-16.0	4-16
Spiritual practices	17.91	3.29	74.62	10.0-24.0	6-24
Spiritual needs	28.70	5.42	79.70	11.6-36.0	9-36

Higher scores show higher spirituality.

**Table 3.** The Scores of Mental Health and its Sub-domains and its Relationship with the Overall Score of Spirituality in the Studied HIV-positive Individuals (n = 81)

Variable	Mean	SD	Obtained Scores	Obtainable scores	Frequency of Disorder	Relation With Spirituality <i>r</i> (P Value*)
Overall score of mental health	36.0	16.4	4.3-70.0	0-84	54 (66.7)	-0.55 (<0.001)
Somatic symptoms	9.5	5.3	0-20	0-21	54 (66.7)	-0.40 (<0.001)
Anxiety/ insomnia	8.6	5.6	0-21	0-21	52 (64.2)	-0.32 (<0.001)
Social dysfunction	11.8	4.2	1.2-20.0	0-21	70 (88.6)	-0.67 (<0.001.)
Severe depression	6.8	6.6	0-21	0-21	37 (45.7)	-0.26 (0.020)

\* Pearson correlation.

The cut-off point in the overall mental health score is 24 and it is 5 for each of the subscales, and those with higher cut-points have a mental health problem.

**Table 4.** Predictors of Mental Health in the Subjects Studied

Variable	$\beta$ (CI 95%)	P	Adjusted R
Self-awareness	-1.64 (-2.12 to -1.16)	<0.001	0.44

in 2011 suggested a significant positive connection between spirituality and quality of life. They concluded that spirituality affects the quality of life of patients with AIDS (20) which is consistent with our findings. Tsevat pointed out in his study that spiritualism plays an important role in improving the quality of life of patients with AIDS. According to the findings of their study, patients with AIDS turn to spiritualism after they are aware of their disease to better cope with it (30), which is consistent with our findings. In the study by Allahbakhshian et al, the relationship between spiritual health and the quality of life of multiple sclerosis patients was investigated. The relationships between spiritual health in religious dimension and the quality of life in mental dimension, as well as between spiritual health in existential dimension and the quality of life in both physical and mental domains were significant (31).

Based on the existing arguments about the function of religion, it seems that spiritualism and religious beliefs have a positive relationship with health. Concerning the impact of religion on health and explaining the mechanism of this relationship, some authors mention that there is an important link between religion and health. Social support is one of the strongest predictors of psychological well-being. Therefore, it seems logical that participating in religious activities along with a crowd of the same beliefs would be a source of satisfaction, being with other people in a supporting and contributing religious context

can be considered as an important factor in improving the health of individuals, and considering the impact of social support on mental stress and the immune system, this does not seem unlikely. The feeling of a sense of social support based on religion, unlike other forms of social support, can increase so much that many may regard it as the source of the supreme support, that is, relationship with God (32).

The findings indicated that two-thirds of patients had mental disorders. Moreover, among mental health dimensions, the highest mean score (the most common disorder) was related to the sub-domain of social impairment and the lowest score was related to the sub-domain of severe depression. The mean of all mental health subscales was higher than the cut-off point, and in fact, there was a disorder in all of them. In this regard, the results of studies show that mental health among patients with AIDS is generally reported at a lower level, and they do not have a very positive attitude towards their physical and mental status in the future (15, 28, 32, 33). Jani et al concluded that the amounts of perceived stress, self-efficacy and mental health disorders, physical symptoms, depression, anxiety and social dysfunction are higher in patients with AIDS than in patients with other chronic diseases (33) which is consistent with our findings.

The results of this study indicated a significant correlation between the total score of spirituality and overall mental health and all sub-domains of it. The findings of the present study are consistent with those of Pirasteh Motlag and Nikmanesh that showed a positive significant connection between the spiritual beliefs in life and overall dimensions of quality of life (20). The results of a study by Viese and Moradi showed that the quality of

life of female patients with AIDS varies in terms of their religious beliefs, in a way that more religious women have a higher quality of life than women with lower religious credence (34). These findings are consistent with the findings of the study by Prado et al, suggesting that Black American mothers with AIDS having high religious behaviors had fewer psychological disorders than those with low religious behavior (35). It is also consistent with the studies of Morse et al who found that the use of religion reduces mental illness and leads to more effective coping strategies in women with AIDS (36).

According to the findings, paying attention to spirituality and meeting the spiritual needs of these people, as well as raising the self-awareness of people and providing the necessary training in this regard would help to promote mental well-being in all its dimensions that in turn leads to improvement in the quality of life of HIV-positive patients. Therefore, special attention should be paid to the care of these individuals by the responsible organizations.

The major limitation is the cross-sectional design of the study, in which the relationship between mental health and spirituality and some socio-demographic characteristics does not necessarily indicate a causal relation. The lack of cooperation of all patients referred and the small number of patients participated in the study are among the other disadvantages. Finally, considering that this study was performed only in one province of the country, it cannot be generalized to other patients in different regions with different cultures. It is suggested that this research be carried out with more samples in other provinces of Iran so as to strongly confirm the validity and truth of the findings. It is also suggested that the level of spirituality and mental health of patients with AIDS be analyzed through qualitative and phenomenological method and by conducting personal interviews with the participants, and the living experiences of patients be used in their living environment so that hidden angles of this phenomenon be revealed and more knowledge be gained in this field.

### Conclusions

Based on the results, two-thirds of HIV positive patients have mental disorders and the correlation between spirituality and mental health and, also, all of its sub-domains are significant. Moreover, the highest score in spirituality was related to the dimension of spiritual needs. Considering the importance of spirituality in coping with the tensions associated with chronic diseases, including HIV and the acceptance of the disease, and according to the results of this study indicating the relationship between spirituality and mental health, providing backgrounds for the improvement of spirituality in HIV positive people for improving mental health in these people is essential.

### Conflict of Interests

Authors have no conflict of interests.

### Ethical Issues

The Ethics Committee of Tabriz University of Medical Sciences approved the study (IR.TBZMED.REC.1396.69),.

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