

Prediction of the Dimensions of Mental Health Based on Spiritual Health and Emotion Regulation Strategies during the Pandemic of Coronavirus in Iran

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Abstract

Introduction: This study is aimed to predict the dimensions of mental health based on spiritual health and emotion regulation strategies during the pandemic of coronavirus in Iran.

Method: The research method was descriptive-correlational, and the statistical population included the people of Zanjan city, from which 300 people were selected as the study sample by using the convenience sampling method. Demographic questionnaires, Goldberg General Health (GHQ), Paloutzian and Ellison Spiritual Health, and Garnfsky and Craig Cognitive Emotion Regulation were used to collect data. Pearson correlation coefficient and multiple regression method with SPSS-26 software were used to analyze the data.

Results: The results showed that spiritual health, adaptive and maladaptive strategies of emotion regulation predict 34%, 19%, and 43% of mental health changes, respectively.

Conclusion: According to findings, it is required to pay attention to the spiritual dimension and also teaching the use of appropriate emotion strategies regulation in stressful situations to promote the mental health of different people of societies.

Keywords: Mental Health, Spiritual Health, Emotion Regulation Strategies, Coronavirus

Introduction

In late December 2019, a new coronavirus, called the novel Coronavirus-2019 (Covid-19), started the outbreak of an infectious disease from Wuhan throughout China, which has already posed major health threats to global public health [1]. The virus spread rapidly throughout the world due to its very high contagion power and infected almost all countries of the world in a short period [2, 3]. Given the pandemic of Covid-19, which affects almost all important economic, political, social, and even military aspects of the world, it is important to discuss the psychological effects of this viral disease on the mental health of individuals at various levels of societies [4]. The extensive prevalence of this disease may endanger the mental health status of individuals at different levels of society, including patients, health care workers, families, children, students, psychiatric patients, and even staff in different occupations [5, 6]. The rapid process of the prevalence of this disease is expected to cause some of the symptoms of psychological disorders in patients. The examination of the results of several studies conducted on patients with Covid-19 in China during the outbreak of the disease indicated that some of these psychological disorders, including anxiety, fear, depression, emotional changes, insomnia, and post-traumatic stress disorder, are reported with a high prevalence rate [7, 8].

Health is a state of complete physical, mental, and social well-being and not merely the absence of disease. This definition is based on the World Health Organization (WHO).

Therefore, according to the WHO, the concept of mental health goes beyond the absence of mental disorders. This concept includes a good mind, self-efficacy perception of independence and autonomy, adequacy and self-fulfillment of potential intellectual and emotional abilities [9, 10]. Mental health plays a significant role in ensuring the dynamism and efficiency of any society so that one of the dimensions of health assessment of different communities is the mental health of that community [11]. Spiritual health is one of the important dimensions of human health that provides a coordinated and integrated relationship between internal forces [12]. Spiritual health is considered as a protective factor in promoting health and preventing diseases, while it can be considered as a successful strategy that contributes to human life in all stages and areas of life, including stressful situations, diseases, and even mortality. Spiritual health is a sense of acceptance, positive emotions, morality, and a sense of positive interaction with superior divine power, others, and oneself, which is achieved through a dynamic, harmonious process of cognition, emotion, action, and personal consequence [13]. According to the Islamic point of view, spiritual health is the spiritual connection of man with God, which is the basis of peace of heart and frees man from anxiety, worry, and despair and leads to psychological security. In the Holy Quran and the narrations of the Imams peace be upon them, spiritual health is mentioned in terms such as peace and reassurance of the heart [14]. The question that arises here is that what is the relationship between dimensions of mental health with spiritual health during the pandemic of Covid-19?

Researchers in recent years have emphasized the importance of spiritual health in the development and promotion of mental and emotional status and its necessity in individual and social life and consider it as one of the factors affecting people's health [15]. The WHO considers spiritual health as one of the most effective aspects of human life and the fourth basic dimension in promoting spirituality [16]. From the Islamic point of view, spiritual health creates a balance between the dimensions of physical, mental, emotional, and social health. Man always needs spirituality, especially in difficult mental conditions and struggles that affect the whole life. If human beings' life is emptied of spirituality, their thoughts and lives will be in chaos, and nothing will be able to fill its void [17]. Spiritual health is the newest dimension of health [18]. In this regard, there is much evidence of a strong relationship between religion and health, which shows the importance of spiritual health. According to previous research, spirituality is associated with health, well-being, and recovery [19-21]. In this regard, Yousefi et al. have shown that as the level of spiritual health gets higher in individuals, the rate of psychological damage gets lower in them, and this factor is a strong predictor in successful coping with psychological crises. Also, spiritual health and increasing religious beliefs can reduce the level of anxiety of people [22]. The results of the conducted studies show that there is a positive relationship between spiritual health and mental health. Spirituality is one of the

effective factors in improving people's mental health. It is actually associated with low levels of variables related to mental disorders such as anxiety, depression, hopelessness, and suicidal ideation in patients [23-30]. Research results also show that emotion regulation strategies have a clear effect on mental health outcomes [31, 32]. Emotion regulation refers to strategies used to reduce, increase, or maintain emotional experiences [33]. Research results have shown that the failure to regulate emotion provides different contexts for mental disorders [33]. Saxena et al. revealed that difficulty in emotion regulation and the use of ineffective emotion regulation strategies are significant and effective factors in reducing mental health [34]. Various studies have shown that positive emotions have a positive and significant relationship with various dimensions of mental health and play a significant role in preventing physical and mental disorders. Also, negative emotions have a positive relationship with mental disorders, and they are effective in creating and perpetuating abnormalities [35-38]. The different emotion regulation strategies have different consequences on people's adaptability and compatibility. According to conducted research, emotion regulation strategies have a significant effect on mental health and can be considered as acceptable factor for the diagnosis and treatment of mental disorders [31, 34, 38-44]. Spiritual health is a spiritual aspect of man, but mental health is a different matter from spiritual health. Therefore, a person may have low spirituality in their life despite their mental health. That is, a person's mental health may be provided by sources other than spirituality. This research has aimed to examine whether spiritual health is related to mental health or not?

Given the above, this issue has been considered only in non-critical situations, and there has been no study conducted to investigate the state of spiritual health and emotional regulation concerning mental health in the context of the outbreak of Covid-19 in Iran. Furthermore, the spiritual health variable is examined along with the emotion regulation variable in this study to determine what percentage of people's mental health predicts spiritual health by considering emotion regulation. On the other hand, in order to have a healthy society and the development of the country, it is necessary to explain the planning and goals of achieving a healthy society in the face of such critical phenomena. Despite the importance of spiritual health and emotion regulation in promoting mental health, and given that the critical conditions of the Covid-19 epidemic have many negative consequences for the mental health of people in the community, it is necessary to examine the factors related to mental health promotion. Accordingly, the general purpose of this study was to predict the dimensions of mental health based on spiritual health and emotion regulation strategies in the context of the Covid-19 outbreak in Zanjan city, Iran.

Method

The present study was conducted by the descriptive-correlational method. Also, this research was practical in terms of its purpose, and its results were specific and

objective and had a practical aspect. The statistical population of this study included the residents aged over 15 years old in Zanjan city who were examined in the winter of 2020. Due to special conditions and restrictions on transportation limitations and social communication, the convenience sampling method was used, and the study was implemented through the Internet. According to compliance with the following inclusion and exclusion criteria, individuals entered the research process. The inclusion criteria included: at least being 15 years old, literacy, access to the Internet and cyberspace, no use of psychiatric drugs, and no stressful accident in the last six months, The exclusion criteria included: questionnaires being more than 10% unanswered, and dissatisfaction with participating in the study. The method was conducted in a way that the questionnaire was designed online and published through social networks (Telegram, WhatsApp, Instagram, and email). After removing the incomplete cases, finally, 300 answers were obtained. The data were analyzed using SPSS 26 software. Statistical methods of this research in the descriptive section included the descriptive information report including mean and standard deviation, and in the inferential section and tests of hypotheses included Pearson correlation and multiple regression methods. The following tools were used in the present study:

General Health Questionnaire (GHQ): The General Health Questionnaire was first developed by Goldberg (1972). The 28-item general health questionnaire consists of four subtests. Questions 1 to 7 are related to the physical symptoms subtest, questions 8 to 14 are related to the anxiety and insomnia subtest, questions 15 to 21 are related to the social dysfunction subtest, and questions 22 to 28 are related to the depression subtest. The scoring method of this questionnaire is the Likert method, according to which the test options are scored as (0-1-2-3), and as a result, the total score of a person will vary from 0 to 84. A higher score indicates better mental health [45]. In 1988, by using the split-half method, Goldberg and Williams reported the reliability of 0.95 for this questionnaire, which was completed by 853 people. After applying the questionnaire to 72 students in Hong Kong [46]. Chan (1985) reported the internal consistency coefficient of 0.93 for this questionnaire using the Cronbach's alpha method. Concurrent validity of the general health questionnaire was performed through simultaneous implementation with the Middlesex Hospital Questionnaire (MHQ) with a correlation coefficient of 0.55. The correlation coefficients between the subtests of this questionnaire with the satisfactorily total score varied from 0.72 to 0.87 [47]. Also, in the present study, the reliability of the questionnaire was obtained 0.95 by Cronbach's alpha method.

Paloutzian and Ellison Spiritual Health Questionnaire: This scale was developed by Paloutzian and Ellison in 1982 and consists of 20 questions; 10 questions assess spiritual health, and the other 10 questions assess existential health [48]. The scoring method of this questionnaire is that the phrases with a positive verb get the answers of "I completely agree" with a score of 6 and "I completely

disagree" get a score of 1, and the rest of the phrases with a negative verb get the answers of "I completely agree" with a score of 1, and phrases with "I totally disagree" get a score of 6. Paloutzian and Ellison reported Cronbach's alpha coefficient of spiritual and existential health and the whole scale as 0.91, 0.91, and 0.93, respectively [49]. In the research of Ghasemi Jobneh et al., Cronbach's alpha coefficient was 0.79 for the total score of spiritual health [50]. The content validity index was studied by Bamdad et al., and the value was calculated to be 0.8, which indicates the appropriate content validity of the tool. Cronbach's alpha method was also used to determine the reliability, and its value was calculated to be 0.7, which indicates the appropriate reliability of the tool [51]. Also, in the present study, the reliability of the questionnaire was obtained 0.97 by the Cronbach's alpha method.

The Cognitive Emotion Regulation Questionnaire (CERQ): The Cognitive Emotion Regulation Questionnaire developed by Garrowski and Craig (2006) is an 18-item instrument that measures cognitive emotion regulation strategies in response to life-threatening and stressful events in five-point scales from 1 (never) to 5 (always). The minimum and maximum scores in each subscale are 2 and 10, respectively [52]. The cognitive emotion regulation strategies in the Cognitive Emotion Regulation Questionnaire are divided into two general categories: adaptive strategies (adapted) and maladaptive strategies (non-adapted). The adaptive strategies include the subscales of neglect, positive refocusing, positive reappraisal, acceptance, and refocus on planning. The maladaptive strategies include the subscales of self-blame, other blame, focus on thought/rumination, and catastrophizing. In the study of Besharat (2016), the reliability of retesting for the factors of self-blame, acceptance, rumination, positive refocusing, planning, positive reassessment, underestimation, catastrophizing, and blaming others were obtained 0.70, 0.81, 0.74, 0.77, 0.83, 0.76, 0.78, 0.72 and 0.80, respectively. These values were significant at the level of $p < 0.001$. Also, the content validity of the questionnaire was calculated for each of the variables 0.73, 0.80, 0.77, 0.75, 0.86, 0.81, 0.79, 0.85 and 0.87, respectively, and it was confirmed at the level of $p < 0.001$ [53]. Also, in the present study, the reliability of the questionnaire was obtained 0.67 by the Cronbach's alpha method.

Results

Among a total of 300 participants, 50.7% were women, and 49.3% were men. Most of the subjects (53.7%) belonged to the age range of 15-25. The highest rate was allocated to people who had bachelor's degrees (40.7%) and were employed (44.3%) and single (61.7%).

The mean and standard deviation of the total mental health in individuals was 26.32 ± 14.53 . The results of the mental health of the samples showed that the highest rate was related to social dysfunction with a mean of 11.22, and the lowest rate was related to the prevalence of depression with a mean of 3.63.

The mean and standard deviation of total spiritual health in individuals was 91.92 ± 24.55 , which indicates moderate

spiritual health in individuals. The results of the spiritual health of the samples showed that the highest and lowest rates were related to religious health factors with a mean of 48.10 and existential health with a mean of 43.80, respectively.

Also, the mean and standard deviation of the component of adaptive strategies was 35.80 ± 8.41 , and the mean and standard deviation of the component of maladaptive strategies was 19.93 ± 6.43 , which indicates more use of adaptive strategies. The results of emotion regulation strategies of the samples showed that the highest and lowest rates were related to refocusing on planning with a mean of 8.18 and blaming others with a mean of 3.88, respectively. Before performing the test, the assumptions of normality of criterion variable, independence of errors and nonlinearity of predictor variables were examined and confirmed, which are presented in the Table 1. The results of the examination of the two, collinearity gets lower and acceptable. The results of the eigenvalue index also indicate the absence of a collinear relationship between the predictor variables (as the value of this index gets closer to zero, it shows the lack of collinearity). Therefore, the correlation between predictor variables is such that

regression models such as multiple regression can be used. According to Table 2, the level of significance for all variables except the case of Coronavirus disease has been more than 0.05. Therefore, the null hypothesis, which is the assumption that the data is normal, is accepted. Therefore, we conclude that the data are normal.

Pearson correlation coefficient was used to study the relationship between mental health dimensions and spiritual health components, and emotion regulation. The results showed that among the scales of spiritual health, religious health ($r = 0.62$, $P \leq 0.01$) and existential health ($r = 0.79$, $P \leq 0.01$) had a positive and significant relationship with mental health. Accordingly, as the religious and existential health of the subjects improves, their mental health is higher and vice versa (Table 3).

Also, social dysfunction ($r = 0.64$, $P \leq 0.01$) had the highest relationship with religious health and physical symptoms ($r = 0.42$, $P \leq 0.01$) had the lowest possible relationship with it. In the case of existential health, depression had the highest relationship with religious health ($r = 0.76$, $P \leq 0.01$), and physical symptoms had the lowest possible relationship with it ($r = 0.57$, $P \leq 0.01$) (Table 3).

Table 1. Results of Linear Analysis between Predictor Variables

Predictive variables	Tolerance	VIF	Eigenvalue
Gender	0.81	1.22	0.28
Age	0.50	1.97	0.15
Education	0.78	1.26	0.12
Job	0.75	1.33	0.05
Marital status	0.60	1.66	0.03
Coronavirus disease	0.85	1.17	0.03
Death from the coronavirus	0.90	1.11	0.02
Spiritual health	0.86	1.16	0.01
Excitement regulation	0.87	1.14	0.01

Table 2. The Kolmogorov-Smirnov Test to Check the Normality of Data

Components	Kolmogorov-smirnov test	P
Gender	0.34	0.12
Age	0.17	0.11
Education	0.28	0.08
Job	0.25	0.07
Marital status	0.40	0.08
Coronavirus disease	0.43	0.001
Death from the coronavirus	0.53	0.001
Spiritual health	0.29	0.23
Excitement regulation	0.17	0.20

Table 3. Correlation Matrix between Dimensions of Research Variables

Variable	1	2	3	4	5	6	7	8	9
Religious health	1								
Existential health	0.84**	1							
Adaptive strategies	0.59**	0.66**	1						
Maladaptive strategies	0.52**	0.65**	0.43**	1					
Physical symptoms	0.42**	0.57**	0.44**	0.60**	1				
Anxiety	0.46**	0.63**	0.44**	0.70**	0.73**	1			
Social dysfunction	0.64**	0.72**	0.60**	0.54**	0.49**	0.58**	1		
Depression	0.60**	0.76**	0.57**	0.64**	0.62**	0.72**	0.62**	1	
Mental health	0.62**	0.79**	0.60**	0.73**	0.82**	0.89**	0.78**	0.88*	1

$P > 0.01^{**}$

Also, among emotion regulation strategies, adaptive strategies had a positive and significant relationship with mental health ($r = 0.60, P \leq 0.01$), and maladaptive strategies had a negative and significant relationship with it ($r = -0.73, P \leq 0.01$). Accordingly, as the subjects use more adaptive strategies, their mental health is higher and vice versa (Table 3).

Besides, social dysfunction had the highest relationship with adaptive strategies ($r = 0.60, P \leq 0.01$), and in contrast to physical symptoms and anxiety, had the lowest possible relationship with it ($r = 0.44, P \leq 0.05$). Also in the case of maladaptive strategies, anxiety had the highest relationship with adaptive strategies ($r = -0.70, P \leq 0.01$) and social dysfunction had the lowest relationship ($r = -0.54, P \leq 0.01$) with it (Table 3).

Multiple regression method was used to test the research hypothesis and study the relationship between predictor variables (spiritual health and emotion regulation strategies) with the criterion variable (mental health). Before performing the test, the assumptions of normality of criterion variable, independence of errors, and non-linearity of predictor variables were examined and confirmed. The results of multiple regression analysis are presented in Table 4.

Table 4 reports the results of multiple mental health regression analysis based on spiritual health and adaptive and maladaptive emotion regulation strategies. According to the results, the value of R^2 is 0.69, which is significant at the level of less than 0.05. Therefore, mental health prediction based on spiritual health and emotion regulation strategies during the pandemic of Covid-19 is significant, and this model can explain 69% of mental health changes.

Also, the coefficients of influence of the predictor variables in Table 4 show that spiritual health can determine 34% of the variance of mental health. Accordingly, by increasing one standard deviation, the existential health, and religious health variables and the mental health variable increase by 0.34 of standard deviation, respectively.

Furthermore, adaptive strategies can determine 19% of the variance in mental health, and maladaptive strategies can determine 43% of the variance in mental health. Accordingly, if one standard deviation of the component of adaptive strategies increases, the mental health variable increases by 0.19 of standard deviation, and if one standard deviation of the component of maladaptive strategies increases, the mental health variable decreases by 0.43 of standard deviation.

Table 4. The Results of Multiple Regression Analysis

Predictor	b	beta	t	P
Y-intercept	37.87		9.66	$P < 0.05$
Mental health	0.20	0.34	7.11	$P < 0.05$
Adaptive strategies	0.34	0.19	4.52	$P < 0.05$
Maladaptive strategies	-0.98	-0.43	-10.76	$P < 0.05$

$R^2 = 0.69$

Discussion

Although there is little literature on psychological research in Iran concerning the epidemic of infectious diseases in general and the Covid-19 in particular, we can focus on the major role of spiritual health and emotion regulation strategies on mental health in the current situation and social crises, and use them to explain these results. The present research studied the prediction of mental health dimensions based on spiritual health and emotion regulation strategies during the context of the pandemic of coronavirus among the residents of Zanjan city. The research results showed that there is a positive and significant relationship between mental health and spiritual health among the residents of Zanjan. In other words, it can be said that the higher and stronger the level of spiritual health in people, the less the rate of psychological damage in them.

Spiritual health is also a good predictor of mental health. These findings are consistent with the results of previous research who stated that spirituality has a relationship with health, having a good feeling, and improvement [23-30]. The decrease of spiritual health in a person is associated with a feeling of stress, anxiety, depression, and loneliness. In the explanation of this issue, it should be noted that these findings are consistent with the concepts of cognitive-emotional religious theory because

spirituality is a quality beyond religious affiliation that strives for inspiration, respect, fear, meaning, and purpose. In this case, spirituality can exist even in those who do not believe in any god [27]. Therefore, it can be concluded that spirituality has been effective in promoting the mental and physical health of individuals and reducing the resulting disorders [24]. Spiritual health is a description of a situation in which a person integrates their forces and focuses on solving their psychological and social problems, and this situation reduces the incidence of mental disorders. Furthermore, when people see themselves to be connected to a higher power, they can be more adaptable to environmental conditions and suffer less from mental disorders. Spiritual health promotes stability in life, peace, and a close relationship with God, self, community, and the environment. Spiritual issues at the time of illness cause the person to seek meaning and purpose in their lives and increase adaptation and tolerance of problems caused by Coronavirus disease.

The findings related to the significant relationship between emotion regulation and mental health are consistent with the results of previous studies [31-34, 40, 42]. In the explanation of this finding, it can be said that the ability to understand, manage and regulate emotions are considered as the principles of success in daily life, and failure to regulate emotions and use ineffective strategies,

such as suppression and avoidance, can have negative consequences such as low levels of mental health for the individuals [33]. Saxena et al. believe that people with emotional dysfunction avoid interpersonal conflicts and do not try to express their negative emotions (sadness, anger, and hatred) and suppress them, and respond to various environmental events with less flexibility. They are unable to control their anger and experience many negative emotions. As a result, they have lower physical and mental health [34]. Therefore, it seems logical that study participants who have more ability for emotion regulation have higher levels of mental health. People with high emotional regulation ability can evaluate stressful events in terms of whether or not they are threatening and identify ways to deal with these situations. Therefore, they can adjust their emotions in different conditions against stressful situations. This issue increases people's well-being and mental health. Therefore, it seems logical that study participants who have more ability for emotion regulation have higher levels of mental health.

The results also showed that positive and negative emotions have a significant direct and inverse relationship with mental health among the residents of Zanjan, respectively. Also, positive emotions in a positive way and negative emotions in a negative way can predict the mental health of these people. These findings are consistent with the results of previous research [22, 35, 36, 42, 44]. These researchers emphasized the role of positive and negative emotions and feelings on health and mental health in different researches. To justify and explain this finding and its consistency with previous findings, it can be said that positive emotions enrich personal resources and are effective in creating creativity, happiness, physical health, and increasing mental health. On the other hand, the use of inefficient emotion regulation strategies reduces a person's ability to cope with an emotional event and harms her mental health [38]. Emotions also affect how people evaluate situations, so that positive emotions help a person better evaluate everyday experiences and help create a sense of happiness that is the foundation of mental health. In contrast, happiness levels are lower in people who experience more negative emotions during the day, and these people have less mental health.

Conclusion

The results of the study can be used in giving services and mental health promotion because they showed a significant relationship between spiritual health and emotional regulation strategies and positive and negative emotions with mental health in the context of the outbreak of Covid-19 in Zanjan. One of the limitations of the present study is the use of the convenience sampling method, which reduces the generalizability of the data. Therefore, it is suggested to conduct the same research in other areas with a larger sample size using random sampling method. Due to the epidemic conditions, this study was conducted in absentia and through virtual networks. Therefore, many adults who did not have the ability or access to use virtual networks did not participate in this study. The critical

condition of the Covid-19 has harmed the mental health of people around the world. According to the findings of this study, the level of spiritual health in the people of Zanjan affects their mental health in the conditions of the Covid-19. The tendency towards religion and spirituality can promote mental health. Given the prevailing religious culture in the Iranian society and the beliefs of the people, it is expected that religious and spiritual influences will be considered as a source of adaptation. Therefore, the cultural affairs staff of the country must pay attention to the spiritual and religious dimensions of the people to witness the effectiveness of such activities on mental health and create a sense of peace in the community and accelerate recovery by implementing religious rules and promoting spiritual health. Also, according to the results of this study, considering education based on emotion regulation and the use of cognitive strategies in stressful situations can be effective in increasing mental health. Therefore, it is suggested to improve the mental health of people in the community by taking measures to teach emotion control and emotion regulation techniques. Actually, making plans to promote mental health is one of the issues that should be considered by relevant officials and policymakers.

Conflict of Interest

The authors declare no conflicts of interest.

Ethical Approval

Ethical principles were considered in this article. The participants were informed about the purpose of the research and its implementation stages. They were also assured about the confidentiality of their information. Moreover, they were allowed to leave the study whenever they wish, and if desired, the results of the research would be available to them.

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