

Predicting depression among the elderly by stressful life events and coping strategies

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ABSTRACT

Background and Aim: Aging is a stage during which stressful events occur frequently. The method of coping with this stress can play an important role in an elderly's mental health. The present study aimed at investigating the role of coping strategies in stressful life events associated with depression. **Method:** The present study was a correlational one conducted by structural equation analysis. As many as 841 elderly people were selected from the general population by adopting a cluster sampling method. Beck's Depression Inventory as well as strategies of coping with stress and stressful events were applied. **Results:** The model test, analyzed by AMOS by using path analysis, indicated that age is positively associated with stressful life events and depression. The "stressful life events" variable is directly and indirectly associated with depression. The emotion-focused coping strategies were positively associated with depression, and problem-focused coping strategies were negatively associated with depression. **Conclusion:** As an individual grows older and experiences stressful life events, his/her depression increases. Elderly people with problem-focused coping strategies are likely to experience less depression.

Keywords: Aging, coping strategies, depression, stressful life events

Introduction

Iran has observed an increased growth of the elderly population over the recent decades. According to the general census of 2016, the over-60-year-old population of Iran has been reported to be about 10% of the entire population.^[1]

Given the increasing incidence of factors such as physical diseases, cognitive impairment, and insufficient support in old age,^[2] psychological disorders are quite common in this period.^[3] Reviewing the studies conducted in Iran indicates that the prevalence of this disorder among the elderly living in nursing

homes is 85.81%, and is 57.58% for the elderly living at home.^[4]

Depression reduces the quality of life among the elderly,^[5] and it is recognized as a risk factor for early death,^[6] suicide,^[7] stroke,^[8] dementia^[9] Alzheimer's disease,^[10] reduced physical and psychological health,^[11] and reduced quality of life.^[12]

Moreover, old age is known to be the time of reviewing the past.^[13] This period is also associated with challenges and stressors. Aging is usually associated with shortages including loss of health, job, independent income, and friends, etc. Many mental challenges are likely to occur as well, such as loneliness, bereavement, and deteriorating health; all of them can lead to increased stress levels.

Since stress is the outcome of a person's cognitive assessment of the situation, giving due attention to stress coping strategies can

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Received: 13-05-2021

Revised: 10-10-2021

Accepted: 28-10-2021

Published: 27-12-2021

Access this article online

Quick Response Code:



Website:
www.jfmpc.com

DOI:
10.4103/jfmpc.jfmpc_881_21

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How to cite this article: Saadati H, Froughan M, Azkhosh M, Bahmani B, Khanjani MS. Predicting depression among the elderly by stressful life events and coping strategies. J Family Med Prim Care 2021;10:4542-7.

be effective in adjusting the behavioral and intellectual patterns among the elderly. The coping strategies generally consist of two elements: problem-focused element and emotion-focused element. In problem-focused coping, the individual focuses on the stressor and attempts to adopt constructive measures to change or eliminate the stressful situation. In contrast, in emotion-focused coping, the individual tries to control the emotional consequences of a stressful event.

Reviewing the related literature indicates that numerous studies have always sought to discover the factors that are likely to help a person in stressful situations and prevent him/her from being damaged under the heavy pressure of life problems. The health-related stressors increase as someone grows older.

The elderly are the assets of any given society and their psychological problems cannot be ignored. Therefore, giving due attention to the variables that can play a protective role against stress and the lack of sufficient scientific resources about the protective variables against stress in the elderly are the gaps that can be filled by conducting this study. The results of such a study will be a preliminary basis for further studies as well as a design for conducting appropriate interventions to improve the psychological problems of the elderly. The present study aimed at determining the role of perceived stress and coping strategies in predicting depression among the elderly.

Method

The present study was a correlational one that was conducted by structural equation analysis. Since human phenomena commonly have multiple causes and investigating them calls for taking multiple variables and structures into account and analyzing the complex relationships existing between them, the structural equation models can be highly practical. The structural equation models primarily provide the researcher with an opportunity for making causal inferences.^[14]

Random cluster sampling was applied for selecting the participants. For this purpose, sampling was conducted from the general population. For calculating the sample size, the formula for estimating a ratio (Formula 1) was applied.^[15] To enter the components of this formula, we have applied the data of the second round of urban health equity assessment in Tehran in 2011.^[16] For this purpose, the depression status among the elderly sample (60–90 years) was calculated, and then, according to Formula 1, the sample size was calculated for the present study.

$$\text{Formula 1. } n = \frac{\left(z_{1-\frac{\alpha}{2}} \right)^2 \times (p \times q)}{(d)^2}$$

In this formula, the P value or the prevalence of depression based on the urban health equity assessment in Tehran in the age group of 60–90 years is 32.4%. The Z value is 1.96, and d value or the measurement accuracy of the study is 0.1 of depression prevalence.^[15] Taking into account the aforementioned

components, according to Formula 1, the sample size was estimated to be 841 people.

$$n = \frac{3.84 \times (0.324 \times 0.676)}{(0.1 \times 0.324)^2} = \frac{0.841}{0.001} = 841$$

The statistical population of the present study included all the elderly (male and female) who were over 60 years old and lived in Tehran. The research environment included cultural centers, the Center for the Experienced of the Municipality, health centers affiliated with the Tehran University of Medical Sciences, city parks, and passages. A multi-stage cluster sampling method was applied. First, Tehran was divided into five regions (north, south, east, west, and center). Then, from each region, two urban districts (out of the 22 districts) were randomly selected. Based on the studies and the formula for determining the sample size, the number of samples in this step of the study was 841 people.

The present study is based on a doctoral thesis conducted at the University of Rehabilitation Sciences and Social Health. Ethical and institutional permission was taken (code of ethics IR.USWR.REC.1396.119) from the University Ethics Committee. The inclusion criteria included being 60 years and older, lack of suffering from cognitive impairment (it was assessed by a short cognitive test), and being a resident of Tehran. After providing information on the research objectives and expressing satisfaction to participate in the study, the tool used was implemented. The data were collected by the interviewers, all of whom had a bachelor's degree in psychology or social work, after ensuring that the elderly did not suffer from cognitive impairment (cutting line of the abbreviated mental test).

Tools

Beck's Depression Inventory—Second Edition (BDI-II)

This questionnaire has 21 items that are scored on a Likert scale (0–3). The study conducted by Keith Dobson and Mohammadkhani (17) on an Iranian sample indicated that this tool is reliable and frequently used to diagnose and measure the severity of depression before and after the treatment. In the study conducted by Fata, Birashk, Atefvahid, and Dabson (2005),^[17] Cronbach's alpha was 0.91, retest coefficient was 0.81, and correlation with Beck Anxiety Inventory was 0.61. The scoring method of the questionnaire is as follows: scores 14–19 are defined as mild depression, 20–28 as moderate depression, and 29–63 as severe depression.^[18,19]

Coping strategies scale

The Billings and Moss Coping Response Inventory (CRI) was designed in 1984 to provide an easy and valid method for evaluating the coping responses of 32 items. This questionnaire finally includes two general subscales: Emotion-focused coping and problem (solving)-focused coping.

The scoring is conducted on a 4-point Likert scale. According to Hosseini, the retest validity coefficient of this questionnaire was 0.79. Moreover, the validity value for the subscales of this questionnaire in his research was 0.9 for problem-focused coping and 0.65 for emotion-focused coping.

Stressful life events

The stressful life events were assessed by the Life Stressful Events Checklist. On this checklist, the elderly were asked about specific events they had experienced over the past 5 years. They were also asked to specify four stress levels on a four-point Likert scale. The events in question include children’s leaving home, lack of contact with close friends or family members, separation or divorce, death of a spouse, death of other family members, illness or serious injury, relocation, being robbed or mugged,^[20] having a disagreement with one’s spouse, financial problems, and being hospitalized.^[21] This checklist gives the researcher two scores: one is the frequency of stressful events and the other is the score of perceived stress [Tables 1 and 2].

Results

Investigating the result of the collinearity test indicates that since the tolerance in all the independent variables is close to 1 and the variance inflation factor has a large distance with 2, it can be concluded that there is low collinearity between the independent variables [Table 3].

In the diagram of the direct effects coefficient of the experimental model, it can be observed that the frequency of stressful life events is directly associated with depression (0.23). Moreover, the mean perceived stress caused by the stressors is also directly associated with depression (0.24). The emotion-focused coping strategy has resulted in increased depression (0.20), but the problem-focused coping strategy has a negative correlation with depression (-0.13) [Diagram 1].

The Root Mean Square Error of Approximation (RMSEA) indicates the acceptable fitting of the recommended model with the data [Table 4].

Discussion

Aging will be one of the most important health problems in the future of societies. Psychological problems, especially depression, are serious mental health problems in this age group. Therefore, the present study was performed with the aim of predicting depression in the elderly. Among the cognitive demographic variables, age was the strongest variable associated with depression; it was observed that the depression score increased as someone grows older. Age can, directly and indirectly, predict depression. In terms of the direct prediction, depression increases as someone grows older. In terms of the indirect prediction, age causes depression by affecting the problem-focused strategies. In other words, in the present study, it was indicated that as someone grows older, the problem-focused coping strategies decrease, and this variable is negatively associated with depression. In a very few studies, including the study of Bergdahl *et al.*,^[22] it has been indicated that aging has no significant relationship with depression among the elderly, while some other studies have indicated that younger age is more associated with depression.^[23,24]

Table 1: The mean of the investigated variables

Variable	Mean	Standard deviation
Depression	18.09	7.28
Stressful life events	11.31	3.39
Emotion-based coping	15.05	6.36
Problem-based coping	15.40	4.72

Table 2: Depression correlation matrix with the investigated variables

Variable	1	2	3	4
Depression	-			
Stressful life events	0.47 **	-		
Emotion-focused coping	0.45 **	0.27 **	-	
Problem-focused coping	-0.33 **	-0.15**	-0.33**	-

Table 3: Collinearity test for investigating the variance inflation factor and collinearity of independent variables in the model

Variable	Beta	T	Confidence interval	Tolerance	VIF
Stressful life events	0.24	10.18	0.001	0.85	1.17
Emotion-focused coping	0.21	8.34	0.001	0.79	1.26
Problem-focused coping	-0.11	-4.81	0.001	0.86	1.15

Table 4: Fitting indicators of the recommended model

Fitting indicators of the variable	χ^2	GFI	AGFI	NFI	CFI	IFI	TLI	RMSEA
Recommended model	66.66	0.98	0.97	0.98	0.99	0.99	0.98	0.03

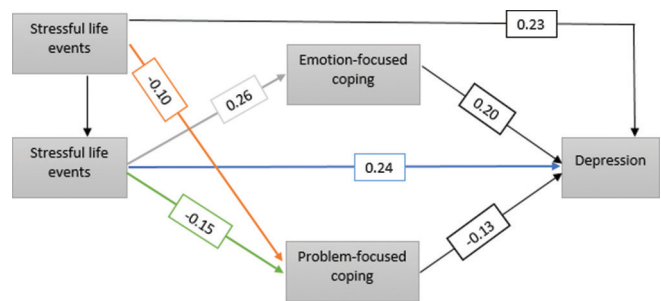


Diagram 1: Path coefficient diagram of direct effects of experimental model

Stressful life events can directly and indirectly predict depression. Life stressful events are negatively associated with problem-focused strategies and positively associated with emotion-focused strategies. In fact, given the research findings, it can be stated that despite higher social support and problem-focused strategies, the elderly will be less frequently prone to depression when they face stress caused by stressful life events.

Different studies have referred to a number of different factors associated with stressful life events with depression. In a study that investigated several stressful events, only widowhood and the death of a spouse were able to predict depression. While children leaving home was associated with reduced depression among men, in general, more stressful life events are likely to predict depression.^[20]

Another study indicated that life events such as family conflict, recent unemployment of the individual or his/her children, one's recent physical illness, the marriage of children or grandchildren due to secondary financial pressures were significantly associated with depression among the elderly.^[25] In a study conducted by Bergdahl *et al.*,^[22] it has been indicated that in the results related to univariate analysis, the loss of a spouse or child increased the risk of depression in men by up to 30 times.

Stressful life events as a risk factor for depression in the elderly have been confirmed and mentioned in previous studies as well.^[26-32] In explaining the relationship between coping strategies and depression, the significant role of coping strategies is required to be mentioned. For example, in a study conducted by Kraaij *et al.*^[33] (the joint effects of stress, coping, and coping resources on depressive symptoms in the elderly), it was observed that those who use more emotion-focused coping strategies are more likely to experience depression in the face of life stresses. The current stressful life events are associated with poor mental health in almost all age groups, especially the elderly. However, these stressful life events are required to be identified and appropriate support, self-help groups, and counseling services need to be provided.

The previous studies have indicated that more stressful life events are one of the risk factors for depression in the elderly.^[26-32] The study conducted by Chou *et al.*^[20,21] has indicated that the frequency of stressful life events is positively associated with depression in the elderly. Moreover, in Sikorski's study, after controlling for age, sex, physical disability, and baseline stage depression score, it has been indicated that the experience of the absence of a spouse was predictive of depression.^[34] However, some variables can mediate between stressful life events and depression. For example, a study has indicated that social support adjusts the effect of stressful life events on depression.^[21] Another study has reported that stressful life events affect women and men differently; as for men, severe financial problems are associated with depression, and serious illness or spouse accidents are associated with women's depression.^[35]

In the present study, coping strategies with stress, as mediating variables, were capable of decreasing the association and correlation between stressful life events and depression. Therefore, as for the relationship between stressful life events and depression, it can be stated that the inability to manage stress in the elderly can play a significant role in reducing the psychological well-being of the elderly.^[36] When the elderly find no support in the face of stressful life events, they assess stressful

situations and events as unfavorable, and they will thus experience unpleasant emotions such as depression. As a result, the ability to cope with the situation and stressful life events depends on the individual's ability to control that situation and the resources used to resolve the stress caused by the situation. These resources are, in fact, physical health, social support, material resources, time management, social skills, and problem-solving ability. Proper management of each of these resources in the face of a stressful situation can help prevent and reduce one's depression.^[37]

In the present study, according to statistical analysis, no relationship was observed between depression and gender. As other studies have reported, gender cannot be a risk factor for depression in the elderly (104, 114, 124) while some studies have reported that gender (being a woman) can be a predictor of depression in the elderly population.^[31,38,39] Other studies have shown that gender cannot be a risk factor for depression in the elderly.^[40-42] In their study on elderly Pakistani women in Punjab, Maqsood *et al.*^[43] have reported that depressive symptoms were fewer in women than in men.

In the present study, according to statistical analysis, no relationship was observed between depression and marital status and job status. However, some studies have pointed to the relationship between being single and depression in the elderly.^[38,39,44] In fact, different studies have reported different results in investigating the association between marital status and depression in the elderly.

Conclusion

As an individual grows older, he/she will experience more stressful life events—depression will thus increase. Effective coping strategies can reduce the effects of stress and stressful life events on depression.

The results showed that stressful life events directly predict depression in the elderly. Problem-oriented coping strategies can reduce the impact of stressful life events but emotion-coping strategies increase the effects of stressful life events.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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