

Research Paper**Relationship of Deterministic Thinking With Loneliness and Depression in the Elderly**Mehdi Sharifi¹, Dana Mohammad-Aminzadeh², Erfan Soleimani Sefat¹, Nasrin Sudmand¹, *Seyyed Jalal Younesi¹

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ABSTRACT

Objectives Deterministic thinking as a destructive factor in disrupting the balance of hope and fear plays an important role in mental health, especially depression and anxiety. This distortion is caused by cognitive inflexibility in the mind. This study was conducted to investigate the relationship between deterministic thinking and depression and sense of loneliness in older adults.

Methods & Materials The type of study was descriptive-correlational. The population included all the older adults over 60 years who were living in a nursing home in 2014-15 in Karaj. Of them, 142 individuals were selected (male and female) by available sampling method. They were then asked to respond to deterministic thinking questionnaire, Geriatric Depression Scale, and UCLA loneliness scale. The data collected were imported to AMOS software and analyzed by path analysis model.

Results The results of the path analysis model showed that deterministic thinking has a significant and positive relationship with depression ($P=0.001$) and sense of loneliness variable ($P=0.001$). It also has a significant effect on the prediction of sense of loneliness and depression with effect size of 0.26 and 0.28, respectively. The mean age was 67.2 years for women and 65.4 years for men. The mean score deterministic thinking, sense of loneliness and depression in women and men respectively were 118/50, 70/80, and 12/55.

Conclusion According to the results, it can be said that deterministic thinking has a significant relationship with depression and sense of loneliness in older adults. So, deterministic thinking acts as a predictor of depression and sense of loneliness in older adults. Therefore, psychological interventions for challenging cognitive distortion of deterministic thinking and attention to mental health in older adult are very important.

Key words:

Loneliness, Depression, Deterministic thinking, Elderly

Extended Abstract**1. Objectives**

With aging, individuals gradually lose some of their physiological and psychosocial functions, and deprivation of social activities makes the

elderly prone to depression and increases their sense of loneliness [1]. Loneliness makes the elderly susceptible to depression [2]. Feeling lonely and depressed are unpleasant and annoying states, which are tied together. Deterministic thinking has an important role in mental health, especially in increasing depression and anxiety as a destructive factor in disturbing the balance between hope and fear [3]. This distortion is shaped

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by cognitive inflexibility in the mind and is, thus, one of the major causes of depression and other psychological incompatibilities [4, 5]. Accordingly, the present study aimed to investigate the relationship between deterministic thinking and depression and loneliness in the elderly.

2. Methods & Materials

The present study was descriptive-correlational, and its population included all aged women and men over the age of 60 who were residents of Kahrizak Nursing center of Karaj in 2014-2015. A total of 142 elderly people (79 women and 63 men) were selected through the available sampling method and the inclusion and exclusion criteria. Inclusion criteria included those elderly who were members of the population protected and had files during the research period. Exclusion criteria included the transfer of individuals from one geographical area to another and death. The questionnaire was distributed among the participants, who were also interviewed by the researchers. From the ethical considerations of this research, it can be said that for all subjects, nature, the purpose and the confidentiality of the results were explained to the participants. In addition, they were explained that their name and identity will remain confidential and that the results obtained will be available to individuals and institutions. The present study was approved by the Ethics Committee of the University of Welfare and Rehabilitation Sciences. To investigate the depression status of the elderly, the short form of the Geriatric Depression scale (GDS) questionnaire was used to assess loneliness; the original version of the questionnaire had 30 questions, but we considered only 20 questions in our analysis. The GDS scale was developed in the University of California, Los Angeles (UCLA) by Russell et al. in 1978 [6]. For measuring definitive thinking, the deterministic thinking scale of Younesi and Mirafzal was used. This questionnaire has 36 questions, whose responses were rated using the Likert Scale (score 1 for "I totally agree" up to score 4 for "I totally disagree") [7].

3. Results

The data from the questionnaire were entered into the AMOS software for analysis using path analysis. Path analysis is considered as a type of structural equation model that includes only the model of causal structure. In fact, path analysis can be done only on the observed variables. First, to examine the status of the variables studied in the target population, the mean of variables was evaluated. The mean of definitive thinking, loneliness, and depression was 118.50, 70.80 and 12.55, respectively. According to the results of Table 1, loneliness and depression had a positive and significant relationship with deterministic thinking in the elderly at level 0.01. In the present study, depression and loneliness also have a positive and significant relationship in elderly people at level 0.05.

Based on the results obtained from the path model test under the AMOS software, the most important indicators of the fitting of the research model included Chi-Square (0.332), degree of freedom (1), normalized Chi-square (0.332), good fit index (0.899), adaptive fit index (0.999), and root mean square error estimate (0.001). Therefore, the developed model is suitable, and there is no need to modify the model. The results indicated that the relationship between deterministic thinking and a sense of loneliness was significant with a significant level of less than 0.001 and the non-standard regression coefficient of 0.054. Deterministic thinking was found to have a positive and significant relationship with loneliness. Also considering that relationship between deterministic thinking and depression is significant at the level less than 0.001 and the non-standard regression coefficient equal to 0.034, deterministic thinking has a positive and significant relationship with depression. According to the results, deterministic thinking with standard coefficients equal to 0.264 and 0.280 have a positive and significant relationship with loneliness and depression in the elderly people living in Karaj Nursing center. On the other hand, the results of path analysis showed that the in-

Table 1. Correlation matrix between research variables

	1	2	3
Definitive thinking	1		
Loneliness	0.26**	1	
Depression	0.22**	0.17*	1

dependent variable of deterministic thinking explains dependent variable related to loneliness with a rate of 7%. This explains the dependent variable of depression in the elderly living in Karaj Nursing center with a rate of 8%. Therefore, it can be claimed that the research question is verified with 99% of confidence, i.e., deterministic thinking is a predictor of depression and loneliness in the elderly.

4. Conclusion

According to the results, loneliness has a positive and significant relationship with deterministic thinking among elderly people. In other words, the more the elderly are likely to predict events and incidence definitively, the more they are likely to feel alone. Other findings of the study showed that depression has a positive and significant relationship with deterministic thinking among the elderly. This is because the elderly people often find events and incidence to be certain, and thus, the possibility of having a negative attitude towards themselves, world, and future will be higher. Given these results, we can say that older people whose scores are higher in definitive thinking feel lonelier and are more likely to develop depression. Therefore, performing psychological interventions to challenge the cognitive distortion of deterministic thinking and paying attention to mental health of the elderly are of great importance.

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Conflict of Interest

The authors declared no conflicts of interest.