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Original Article

Investigating Empty Nest, Depressive Symptoms, and Feelings of Loneliness in the Elderly in Gorgan, Iran: A Cross-sectional Study

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Abstract

Introduction: The aging population poses a significant social and healthcare challenge globally. The empty nest syndrome, where parents experience feelings of depression and loneliness when children leave home, is becoming increasingly prevalent. This study aimed to investigate the empty nests, depressive symptoms, and feelings of loneliness in the elderly population in Gorgan, Iran.

Methods: This cross-sectional study was conducted in 2020, involving 234 elderly participants aged 60 and older, associated with comprehensive health centers. The participants were selected using a multi-stage sampling method. The data were collected through demographic questionnaires, the Geriatric Depression Scale, and the Social and Emotional Loneliness Scale for Adults, comprising romantic, family, and social loneliness subscales. Statistical analysis was performed using descriptive and analytical methods in SPSS version 22. The Spearman's correlation was used to determine the relationship between the mean scores of depressive symptoms and feelings of loneliness. Group comparisons were conducted using the Mann-Whitney U test ($P<0.05$).

Results: The study revealed that many elders experienced the empty nest phase (65.89%), with an average age of 63.02 ± 7.97. About 53.2% reported mild to moderate depression levels and 57% feelings of loneliness. The family domain had the highest loneliness rate (76.0%), while the social domain had the lowest rate (50.0%). Individuals with empty nests had significantly higher loneliness scores (79.52 ± 6.40) compared to those without empty nests (49.22 ± 7.36) ($P=0.008$). No significant difference was observed in depression scores between the two groups ($P=0.630$). The results of the Spearman correlation test demonstrated a positive and significant relationship between loneliness and depressive symptoms in older adults ($r=0.598$, $P<0.001$).

Conclusion: Implementing strategies such as conducting sessions with psychologists at healthcare facilities can help diminish feelings of loneliness and depression among this vulnerable group, ultimately improving their overall well-being.

Keywords: Aging, Depressive symptoms, Empty nest, Feelings of loneliness

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Introduction

The aging population is one of the most significant social and healthcare challenges (1). The global population comprises 12.3% of individuals aged 60 and older, a figure projected to reach nearly 22% by 2050 (2).

The empty nest is a term used to describe a phase in the family life cycle when children have reached adulthood and moved out of the parental home, marking a significant transitional period for the parents (3,4). If parents do not successfully adapt to this stage of development, they may experience empty nest syndrome (3,5,6). Symptoms of depression and feelings of loneliness are among the key indicators of this syndrome, which can potentially lead individuals into challenging and inappropriate situations (7,8).

Various studies have shown a relationship between feelings of loneliness and depression in parents following their children's departure (9-11), Based on a report by

the World Health Organization (WHO), a significant proportion of parents experience increased feelings of isolation and potential depressive symptoms once their children leave home (12); yet, other researchers suggest that the empty nest could serve as a time for parental rejuvenation and peace (8,13,14).

The literature review has revealed that empty nest syndrome differs significantly for parents whose children have left home, demonstrating that the concept of empty nest has a context-based nature and is influenced by factors such as cultural, economic, and social conditions within societies. In today's society, with the trend of delayed marriages and prolonged periods of education, children are leaving the parental home at a later stage (15), leading to a simultaneous occurrence of empty nest syndrome and aging (4,16). This convergence exacerbates the challenges of the aging process, which is already associated with numerous physical and psychological difficulties. Therefore, given the significance of the empty nest phase and the potential manifestation of symptoms such as depression and loneliness in this vulnerable group, further research is warranted. Thus, this study sought to investigate empty nest syndrome, loneliness, and depression among the elderly population in Gorgan, Iran, considering the diverse cultural and social contexts within the country.

Materials and Methods

This descriptive cross-sectional study was performed in 2020 in Gorgan. A total of 234 elderly individuals were recruited using a multi-stage sampling method (proportional and simple random sampling). The research commenced after completing the necessary legal procedures and obtaining ethical approval from the Ethics Committee at Golestan University of Medical Sciences, adhering to ethical guidelines, and obtaining written informed consent from the participants. Participation in the study was completely optional, and patients could cancel their cooperation at any time.

Initially, 6 comprehensive health centers were randomly selected out of 18. One of the researchers, after obtaining permission from the health centers, reviewed the information on the elderly in the health registration system and prepared a list of eligible elderly individuals. Subsequently, using random numbers generated by the Random Between Software in Excel, the elderly participants were randomly chosen and, if eligible and willing to participate, were enrolled in the study until reaching the desired sample size. In case of non-response, attempts were made to contact the participants using the previously obtained phone numbers from the software.

The inclusion criteria for the study encompassed being 60 years and over, possessing the ability to communicate verbally, without any diagnosed psychiatric disorders necessitating medication use based on self-reporting by the individual (e.g., psychosis and anxiety disorders), having not experienced bereavement or personal crises within the previous six months, having at least one offspring, and residing outside of elderly care facilities. On the other hand, the exclusion criteria included individuals with cognitive impairment (scoring less than 7 on the abbreviated mental test questionnaire). The required data were collected by administering demographic questionnaires, soliciting information on age, gender, marital status, ethnicity, educational level, occupational status, place of domicile, insurance coverage, 'empty nest' status, and any underlying disease. Additionally, the Geriatric Depression Scale and the abbreviated version of the Social and Emotional Loneliness Scale for Adults (SELSA-S) were employed as assessment tools.

The Geriatric Depression Scale is a suitable tool for diagnosing symptoms of depression in the elderly, which has been validated in various therapeutic and non-therapeutic settings. This scale's reliability was obtained using the Cronbach's alpha coefficient of 0.85 (17). In the study by Minaei et al, the construct validity of the questionnaire was examined using factor analysis and convergent validity. In this study, through exploratory factor analysis, four factors were identified, accounting for a total of 36% of the variance (18). The short form consisting of 15 questions has a score range from 0 to 15, where scores 0–5, 6–10, and 11–15 indicate no depression, mild-to-moderate depression, and severe depression, respectively. The questions are binary (yes/no) with responses scored as 0 or 1 (17).

The Social and Emotional Loneliness Scale for Adults-S includes 14 items and three subscales, namely, emotional loneliness (4 items: 3, 6, 8, and 10), family loneliness (5 items: 2, 4, 7, 11, and 14), and social loneliness (5 items: 1, 5, 9, 12, and 13). All items are rated on a 5-point Likert-type scale ranging from strongly disagree (score of 5) to strongly agree (score of 1). Item 14 is reverse-scored. Therefore, scores range from 18 to 66, with higher scores indicating greater loneliness. The scale's reliability in Iran was confirmed by Jowkar, with a Cronbach's alpha coefficient of 0.90. The Cronbach's alpha coefficients for the romantic, social, and family subscales were 0.92, 0.84, and 0.78 (19).

Finally, the obtained information was analyzed using descriptive (means, standard deviations, frequencies, and percentages) and analytical statistics in SPSS, version 22. The normal distribution of data was first measured using the Shapiro-Wilk test. The normality of the research population was rejected, so non-parametric tests were used for the analyses. The Spearman's correlation was employed to determine the relationship between the mean scores of depressive symptoms and feelings of loneliness. Group comparisons were performed using the Man-Whitney U test. The significance level for all the analyses was $P > 0.05$.

Results

Based on the findings of the present study, the average age of the participating elderly individuals was 63.02 ± 7.97.

Most of them (65.89%) were in the empty nest phase (Table 1). Approximately 53.2% of the participants reported encountering mild to moderate levels of depression, (Table 1). Moreover, the highest level of loneliness (0.76%) was noted in the family domain, while the lowest was identified in the social domain (0.50%), the details of which are provided in Table 2.

Based on the data in Table 2 and the scatter plot (Figure 1), the results of the Spearman correlation test showed a positive and significant relationship between the loneliness and depressive symptoms in older adults ($r=0.598$, $P<0.001$).

The results of the Mann-Whitney U test (Table 3) indicated that the average loneliness score was significantly higher in individuals with empty nests (79.52 ± 6.40) compared to those without empty nest (49.22 ± 7.36), with a statistically significant level ($P=0.008$). However, the average depression score in individuals with empty nests (76.5 ± 24.3) did not exhibit a significant difference ($P=0.630$) in comparison to those without empty nests (54.5 ± 7.3).

Table 1. Demographic and Clinical Characteristics of the Elderly (n=234)

Demographic and Clinical Characteristics		Frequency (%)
Gender	Female	102 (43.5)
	Male	132 (56.5)
Age	60-64	151 (64.7)
	65-74	71 (30.2)
	≥75	22 (5.1)
Material status	Married	165 (70.3)
	Widowed	65 (27.9)
	Divorced	4 (1.8)
Ethnicity	Persian	186 (79.5)
	Turkmen	10 (4.4)
	Kazakh	6 (2.5)
	Sistani	16 (6.7)
	Baloch	9 (3.6)
	Others	7 (3.2)
Educational level	Illiterate	97 (41.5)
	Under diploma	91 (38.9)
	Diploma	28 (11.8)
	Academic	18 (7.8)
Occupation status	Unemployed/retired	32 (13.6)
	Employee	19 (8.1)
	Self-employed/farmer/worker	146 (62.4)
	Homemaker	37 (15.9)
Place of domicile	Own house	202 (86.2)
	Rented House	19 (7.7)
	Children's house	4 (1.2)
	No fixed location	9 (3.9)
Insurance coverage	Rural insurance	48 (20.7)
	Employee insurance	42 (18)
	Social security insurance	80 (34.1)
	Self-insurance	22 (9.2)
	No insurance	42 (18)
'Empty nest' status	With empty nest	154 (65.9)
	Without empty nest	80 (34.1)
Duration of the youngest child's departure (month)	<2	2 (0.9)
	2-5	27 (11.5)
	6-11	25 (10.5)
	12-23	152 (65.1)
	≥24	28 (12)
Underlying diseases	<2	131 (55.8)
	≥2	103 (44.2)

Discussion

The results of this study revealed that a significant percentage (65.89%) of the elderly participants was observed in the empty nest phase, highlighting an important aspect of their life stage. Interestingly, the finding that 34.1% of the elderly parents have not yet reached the empty nest phase suggests a potentially shortened period of empty nest transition in this particular statistical population. This contrasts with the findings of prior research, demonstrating a prolonged empty nest period (20). Several factors could contribute to these contrasting findings. Trends such as delayed marriage, economic challenges, increased divorce rates among children, extended periods of higher education for offspring, unemployment issues, and changing attitudes toward marriage among the youth may be influencing the dynamics of the empty nest phase among the elderly participants (21). The interplay of these socio-economic and demographic factors underscores the complexity of transitions experienced by parents as their children leave home, warranting further exploration and consideration in future studies.

The results of the current study revealed that a majority of elderly participants experienced mild to moderate depression, reflecting findings consistent with those of a study conducted in Iran (13). This suggests a significant prevalence of depressive symptoms among older individuals in the study population. Conversely, the results of some studies from China and Germany indicated that empty nest parents in those countries did not exhibit signs of depression and reported overall psychological well-being (22,23).

The contrasting findings between the present study and research conducted in China and Germany highlight potential variations in the mental health outcomes of elderly individuals across different cultural and societal contexts. Factors such as cultural norms, familial structures, and social support systems may play a role in shaping the psychological well-being of older adults experiencing the empty nest phenomenon (24,25). Further research exploring these cultural influences on mental health outcomes among elderly populations can provide valuable insights into tailored interventions and

Table 2. The Mean Score and Relationship Between the Loneliness and Depressive Symptoms of the Empty-nest Elderly

	Variables	M ± SD	Min-Max	Correlation*	*P* Value
Feelings of loneliness	Depressive symptoms	5.53 ± 3.19	0-14	1	
	Romantic	0.53 ± 0.20	0-1	$r = 0.436$	
	Family	0.76 ± 0.17	0-1	$r = 0.512$	< 0.001*
	Social	0.50 ± 0.20	0-1	$r = 0.481$	
	Total	0.57 ± 0.16	0-1	$r = 0.598$	

Note. *Spearman's rho; M: Mean; SD: Standard deviation; Min; Minimum; Max: Maximum.

Table 3. Comparison of the Mean Score of Loneliness and Depressive Symptoms Between Empty-nest and Non-empty-nest Elderly

Variables	Empty-nest		Non-empty-nest		*P*-value
	M ± SD	Min-Max	M ± SD	Min-Max	
Loneliness	52.79 ± 6.40	35-66	49.22 ± 7.36	24-65	0.008 *
Depressive symptoms	5.76 ± 3.24	0-14	5.54 ± 3.07	0-13	0.630 *

Note. * Mann-Whitney; M: Mean; SD: Standard deviation; Min; Minimum; Max: Maximum.

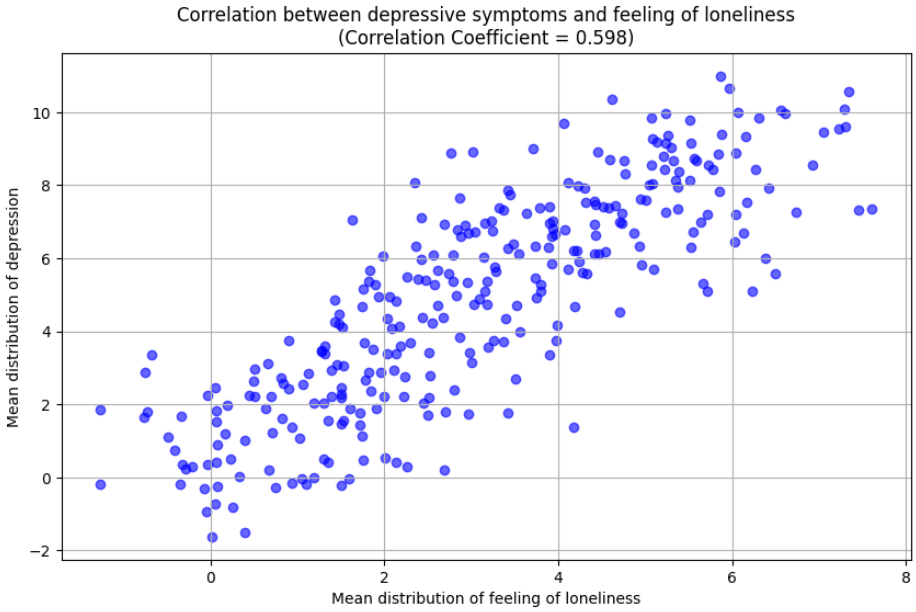

Figure 1. The Scatter Plot of the Correlation Results of Depressive Symptoms and Feelings of Loneliness

support strategies.

The findings of this study revealed that the majority of elderly people experienced feelings of loneliness, with the highest and lowest levels of loneliness reported in the family and social dimensions, respectively. This result aligns with those of other studies (26,27), providing a consistent pattern in the literature. It is crucial for policymakers to note that loneliness and feeling lonely are two distinct issues (28). While it may be expected for individuals in the empty nest phase to experience loneliness, the experience of feeling lonely among parents whose children have not yet left home merits further investigation and intervention. The results of a study in China also highlighted a higher prevalence of loneliness among elderly individuals with empty nests compared to those without empty nests, indicating a direct association between the empty nest phase and symptoms of depression and loneliness (27). Conversely, another study in China found a low level of loneliness among elders (1). The variations in these findings may be attributed to individual differences, cultural norms, religious beliefs, and differences in family structures between Iranian and Chinese societies. Further research is needed to explore these complexities within the context of social relationships and aging in different cultural settings.

Given the significant positive correlation between loneliness and depressive symptoms in older adults, this implies that as feelings of loneliness increase among older adults, so do their depressive symptoms. These findings suggest a strong association between loneliness and depressive symptoms in this population, highlighting the importance of considering both factors in mental health interventions for elders. The alignment of these results with the existing literature (11,29,30) underscores the reliability and generalizability of the relationship between loneliness and depressive symptoms in the older adult

population. Accordingly, these findings contribute to the growing body of evidence supporting the importance of addressing both loneliness and depressive symptoms holistically in mental health interventions for older adults.

Conclusion

The findings of this study emphasize the importance of addressing empty nest syndrome in elderly individuals within comprehensive health centers by raising awareness of the challenges they face when their children leave home. Collaborative sessions led by psychologists at healthcare facilities are identified as a vital intervention to enhance the emotional well-being of elders. Enhancing awareness and prioritizing psychosocial support can significantly impact the mental health and overall quality of life of elderly individuals. Future research should focus on evaluating long-term outcomes and implementing strategies to assist elders in managing emotional challenges related to empty nest syndrome. This comprehensive approach is essential for providing optimal care and support for elders experiencing these issues.

Limitations

The limitations of the study include cultural differences in the elderly population, child-rearing practices, and the dynamics of family relationships. To address these limitations, researchers conducted a comprehensive literature review on cultural attitudes toward aging and elderly care, included a diverse sample representing various child-rearing practices, and explored family dynamics within different cultural contexts.

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Authors' Contribution

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Writing–review & editing: Maryam Ahmadi Khatir, Shohreh Kolagari.

Competing Interests

The authors declare no conflict of interests.

Ethical Approval

The present manuscript has been taken from the master's thesis in the field of geriatric nursing, approved by the Ethics Committee of Golestan University of Medical Sciences (Code: IR.GOUMS.REC.1399.099).

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