



Research Paper

Prevalence of Hoarding Disorder in a Nonclinical Sample



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ABSTRACT

Background: Hoarding disorder (HD) has been classified as a mental disorder in the diagnostic and statistical manual of mental disorders, 5th edition (DSM-5). This disorder might have some individual and social burden, and there has been limited data on the prevalence of HD in Iran.

Objectives: The present study aimed to investigate the prevalence of HD and its relationship with the demographic characteristics in a nonclinical sample.

Materials & Methods: This was a descriptive cross-sectional study on people who accompanied patients visiting hospitals in Rasht City, Iran, from November 2021 to February 2022. The participants were evaluated with the demographic questionnaire and the saving inventory-revised (SI-R) for measuring hoarding-related experiences.

Results: A total of 884 people with a Mean±SD of age 39.45±12.85 years participated in this study. About 3.2% of participants had HD. Their mean hoarding scores had a significant difference in terms of gender, level of education, and occupation (P<0.05). Still, the prevalence of HD had no statistically significant difference (P>0.05) in terms of age, gender, marital status, level of education, occupation, and place of residence.

Conclusion: Based on the present study, only 3.2% of participants suffered from HD. Although in terms of gender, level of education, and occupation, a significant difference was observed in hoarding scores, the prevalence of HD had no association with demographic characteristics.

Keywords: Hoarding disorder, Prevalence, Iran

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Highlights

- Hoarding disorder is observed in 3.2% of individuals accompanying patients visiting the hospitals.
- Hoarding scores have a significant difference in terms of gender, level of education, and occupation.
- The prevalence of hoarding disorder has no association with demographic characteristics.

Introduction

Hoarding disorder (HD) had no criteria in the diagnostic and statistical manual of mental disorders, 5th edition (DSM-5) [1], and it was indirectly considered a symptom of obsessive-compulsive disorder (OCD) [2]. But in the DSM-V, this disorder is characterized by acquiring and not discarding a number of items that seem useless or of limited value. Also, living spaces are cluttered enough to impede the activities for which those spaces are designed, leading to significant distress or impairment in function. It is classified as OCD and related disorders [3].

Various factors play a role in expressing HD symptoms, such as genetic components, neurocognitive functioning, attachments, beliefs, behaviors, emotions, personality traits, and past traumatic and life events. Also, HD might be a life-long disease if not treated [4], and it might be associated with economic and social burdens, including impairments at work, poor physical health, and poor social participation [5].

According to the results of some studies, HD might be comorbid with other psychiatric disorders, such as major depressive disorder, generalized anxiety disorder, and social phobia [6]. In addition, people suffering from HD have a lower quality of life [7]. The results of a systematic review confirmed that HD can affect functioning and quality of life [8].

The prevalence of HD in the general population was estimated from 1.5% to 6% [9-13]. However, in Iran, in a sample of university students, the prevalence of hoarding symptoms was reported to be higher, about 16% [14]. According to a study, while HD's severity and main features seem stable in different cultures, people with HD might be different in socio-demographic and comorbid psychiatric features [15]. However, regarding demographic characteristics, there were variable results in different studies. For example, regarding the prevalence of HD in terms of gender, some studies reported

more prevalence of HD in males [11, 12] or females [16], and some of them [9, 13, 14, 17, 18] found no association between HD and gender.

Limited studies have been conducted on the prevalence of HD in Iran, and considering the importance of this issue, we aimed to investigate the prevalence of HD in a nonclinical sample in the present study. Moreover, we evaluated the effects of demographic characteristics on the prevalence of hoarding disorder.

Materials and Methods

This research was a descriptive cross-sectional study on people who accompanied patients visiting all educational and therapeutic hospitals in Rasht City, the north of Iran, from November 2021 to February 2022. This study was carried out after approval by the ethics committee of [Guilan University of Medical Sciences](#). We used convenience sampling to recruit study subjects. After obtaining the agreement of the companions, they were entered into the study. The inclusion criteria were as follows: The participants were accompanied by the patients and not patients referring to the hospitals, and willingness to participate in the study. Subjects the researcher determined to be unable to understand the questions were excluded from the study. The participants filled out the questionnaires, and the researchers read and filled out the questionnaires for illiterate people.

Demographic information was obtained by a demographic questionnaire that included age, gender, marital status, level of education, occupation, and place of residence. For measuring hoarding-related experiences, the saving inventory-revised was used. As a screening tool, this scale is a self-report questionnaire with 23 items to measure the severity of hoarding symptoms. A 5-point Likert scale (not at all=0 to very much=4) was used to score every item, the total score ranged from 0 to 92, and higher scores indicated greater hoarding severity. The optimal cut-off for the total score is 39 [19]. This tool has three subscales: Clutter, difficulty discarding, and excessive acquisition. The reliability by internal consistency

coefficient was reported for the total score of the scale (0.92) and subscales of clutter (0.91), discarding (0.88), and acquisition (0.87) [20]. The internal consistency coefficient for the total score of the Persian version of this scale was 0.87 [21].

Statistical analysis

The sample size was calculated at 884 with a 95% confidence level, based on the study by Mueller et al. [22]. The data were analyzed using the IBM SPSS statistics software, version 21. Frequency and frequency percentage were used to describe HD scores, Mean \pm SD, and to determine HD status. The Kolmogorov-Smirnov test was used to determine the normality distribution of HD quantitative variables, and the Mann-Whitney U, Kruskal-Wallis, Fisher exact, and the chi-square tests were used to investigate the relationship between HD and demographic variables. The significance level was set at $P < 0.05$.

Results

In this study, 884 people participated, and their Mean \pm SD (min-max) of age was 39.45 \pm 12.85 (12-74) years. Table 1 presents the demographic characteristics of participants and the mean hoarding scores in terms of demographic characteristics.

Of the total sample, only 28 subjects (3.2%) had HD (total score higher than 39). The mean age of people who suffered from HD was 40.39 \pm 13 years, and those without HD were 39.46 \pm 12.8 years. There was no statistically significant difference between the two groups ($P = 0.705$). As indicated in Table 2, the prevalence of HD in terms of demographic characteristics had no statistically significant difference ($P > 0.05$).

The mean hoarding scores had significant differences in terms of gender, level of education, and occupation ($P < 0.05$). Table 3 shows the mean of the total score of hoarding and its subscales in the participants. The mean total score of hoarding was lower than the cut-off point.

Discussion

The present study aimed to investigate the prevalence of HD and its relationship with the demographic characteristics among a nonclinical sample who accompanied patients visiting hospitals. According to the results, only 3.2% of participants suffered from HD, and 3.2% of females and 3.1% of males had this disease. The prevalence of HD in most studies in other countries was estimated between 2% and 6% [10-13]. Based on a systematic review of eleven studies in developed countries in 2019, the pooled rate of HD was reported to be 2.5%

Table 1. Demographics and the mean hoarding scores of participants

Variables		No. (%)	Mean \pm SD	P
Gender	Female	469(53.1)	21.71 \pm 10.38	0.0001*
	Male	415(46.9)	19.31 \pm 10.87	
Marital status	Single	243(27.5)	19.71 \pm 10.01	0.101**
	Married	593(67.1)	21.09 \pm 10.96	
	Divorced	48(5.4)	18.75 \pm 10.02	
Education	< Diploma	144(16.3)	20.19 \pm 9.22	0.0001**
	Diploma	255(28.8)	18.53 \pm 10.36	
	> Diploma	485(54.9)	21.78 \pm 11.08	
Occupation	Unemployed	300(33.9)	19.93 \pm 9.54	0.0001**
	Self-employed	290(32.8)	19.28 \pm 10.55	
	Employed/Retired	294(33.3)	22.54 \pm 11.61	
Place of residence	Urban	694(78.5)	20.84 \pm 10.85	0.141*
	Rural	190(21.5)	19.67 \pm 9.98	

*The mann-whitney U test,**The kruskal-wallis test.

Table 2. Frequency of hoarding disorder in terms of demographic characteristics

Variables		No. (%)	P
Gender	Female	15(3.2)	0.956*
	Male	13(3.1)	
Marital status	Single	7(2.9)	0.894*
	Married	19(3.2)	
	Divorced	2(4.2)	
Education	< Diploma	3(2.1)	0.709*
	Diploma	9(3.5)	
	> Diploma	16(3.3)	
Occupation	Unemployed	6(2)	0.364*
	Self-employed	11(3.8)	
	Employed/Retired	11(3.7)	
Place of residence	Urban	22(3.2)	1.0**
	Rural	6(3.2)	

*The chi-square, **The Fisher exact test.



[10]. However, the previous study in Iran, assessing the prevalence of hoarding by the saving inventory (revised) in a sample of 1263 university students, showed a higher rate of HD than the results of our study (16% vs 3.2%) [14]. The difference in results might be due to different methodological approaches.

In the present study, the mean score of hoarding was significantly higher in females. However, we did not find a significant relationship between gender and the prevalence of HD, similar to most previous studies [9, 13, 14, 17, 18].

In most previous studies [9, 11, 12, 18, 23, 24], the HD rate was higher in older age. However, the results of our study showed no association between age and HD, con-

sistent with the study by Mueller et al. [22]. According to some research, more than 70% of adults with hoard symptoms report the onset of symptoms before age 20 [12, 25]. It seems that hoarders often endure a constant struggle with hoarding [4], and hoarding behaviors have been observed in people of all ages.

Based on the present results, in terms of education level, there was no significant difference in the prevalence of HD. At the same time, the hoarding score was significantly higher in people with higher education than those with diplomas. In some studies [12, 18, 26], there was no association between education and hoarding, but in the study by Fontenelle et al. [27], hoarders had higher levels of education.

Table 3. The mean total score of hoarding and its subscales

Subscales of Hoarding	Mean±SD
Clutter	9.68±6.11
Difficulty discarding	5.90±4.19
Excessive acquisition	5.00±3.48
Total score	20.59±10.68



We found that employed or retired participants had higher scores in hoarding, but the prevalence of hoarding regarding the type of occupation had not significantly different. The results of some studies [12, 18] also showed no relationship between the prevalence of HD and employment status. However, another research indicated more hoarding symptoms in unemployed people [28].

Similar to the Jaisoorya et al. study [18], we found no association between the prevalence of HD and the place of residence. Unlike the study by Rodriguez et al. [23], people in rural areas had a higher rate of HD. Based on our findings, hoarding scores and the prevalence of HD had no significant difference in terms of marital status. However, the severity of hoarding was higher in single people reported by Spittlehouse et al. study [28]. According to our results, we found no relationship between demographic features and HD. Apart from age, our results differed from most previous studies; in the other demographic characteristics, different studies had different results and often found no association with HD. However, this was a cross-sectional study, so it was difficult to conclude the influence of demographic characteristics.

Previous studies show a relationship between suffering from HD and psychological problems, such as anxiety and depression [6, 29, 30]. Therefore, it can be further investigated in future studies.

Conclusion

According to our results, only 3.2% of participants suffered from HD, and 3.2% of females and 3.1% of males had this disease. The hoarding scores were higher in females, subjects with higher education, and employed or retired ones. However, the prevalence of HD based on demographic features had no significant difference.

Ethical Considerations

Compliance with ethical guidelines

The study procedures were consistent with the ethical guidelines of the Declaration of Helsinki 2013. The study protocol was approved by the Ethics Committee at the Research Center of [Guilan University of Medical Sciences](#) (Code: IR.GUMS.REC.1400.518), and written informed consent was obtained from all subjects.

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Authors contributions

Conceptualization, investigation, and methodology: All authors; Supervision: Ali Pourramzani and Robabeh Soleimani; Data collection: Fatemeh Rahnavard Karbasdehi and Ahmadreza Ghovvati Golafzani; Formal analysis: Robabeh Soleimani and Fatemeh Eslamdoust-Siahestalkhi; Writing the original draft: Fatemeh Eslamdoust-Siahestalkhi; Writing, review, and editing: Ali Pourramzani, Robabeh Soleimani and Fatemeh Eslamdoust-Siahestalkhi.

Conflict of interest

The authors declared no conflict of interest.

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