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Survey of the General Mental Health Status of Medical Staff at Zanjan Health Centers in 2024-2025

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ABSTRACT

Background: Mental health is a fundamental component of overall health and a key indicator of community well-being. This study aimed to assess general mental health and examine selected demographic factors associated with psychological health among employees at health centers in Zanjan, Iran.

Methods: This cross-sectional study was conducted among employees of health centers in Zanjan during 2024-2025. The study population included all healthcare staff working in these centers, totaling 266 individuals. Data were collected using the 28-item General Health Questionnaire (GHQ-28). Statistical analyses included analysis of variance (ANOVA), the Kruskal-Wallis test, the Mann-Whitney U test, the Pearson correlation coefficient, and the independent t-test.

Results: The findings indicated that there were no statistically significant differences in mean psychological health scores across demographic variables ($p > 0.05$). However, based on the GHQ-28 cut-off criteria, 50.40% of employees were identified as being at risk of psychological distress.

Conclusion: Approximately half of the employees were at risk of psychological distress; therefore, identifying contributing factors and implementing appropriate preventive and supportive strategies are necessary.

1. Introduction

Mental health is one of the fundamental indicators used to evaluate the overall health of societies. It is defined as a state of well-being in which an individual can realize his or her potential abilities, cope with the normal stresses of life, perform productive and meaningful work, and contribute effectively to the community (Rostami et al., 2018). Stress has been identified as a contributing factor in approximately 75% of medical complaints and can seriously jeopardize students' academic performance and learning capacity. Findings from a study conducted among Iranian adolescents revealed that 34% of girls and 23.7% of boys were suspected of having psychological disorders. Numerous studies have also indicated that a considerable proportion of adolescents suffer from mental health problems, with approximately 40-70% experiencing one or more stressful life events during adolescence. Research over the past decade has demonstrated that mental health problems constitute one of the major public health challenges and impose a substantial financial burden on societies. Accordingly, the cost of managing psychiatric disorders in Europe and North America in 1999 exceeded 120 billion dollars (deVries & Wilkerson, 2003).

According to the latest report of the World Health Organization (WHO), more than one billion people worldwide are living with a mental disorder, with anxiety and depressive disorders being the most common (WHO, 2025). A national mental health survey in Iran, conducted among 35,014 individuals aged 15 years and older using the GHQ-28, reported a prevalence of suspected mental disorders of 21% (Noorbala et al., 2004). A subsequent

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national survey in 2015, using the same instrument in the same target population, reported a prevalence of 23.44% (Noorbala et al., 2017). Stress, anxiety, and depression are also highly prevalent among healthcare workers. A meta-analysis of 28 studies involving 6,581 nurses working in Iranian hospitals reported that approximately one-third experienced depression, and studies using the GHQ-28 reported prevalence rates of 46% for anxiety and 49% for stress (Hemmati et al., 2021).

Despite the importance of this issue, no previous studies have been conducted to assess the general mental health status of employees working at Zanjan health centers. Therefore, the present study aimed to determine the general mental health status and the prevalence of suspected mental disorders, and to identify selected demographic factors associated with mental health among employees of health centers in Zanjan.

2. Materials and Methods

2.1 Study design

This cross-sectional study was conducted during 2024–2025 at urban health and healthcare centers affiliated with the Zanjan Health Center, Zanjan, Iran.

2.2 Study Population and Sampling

The study population consisted of all employees working in urban health centers affiliated with Zanjan University of Medical Sciences during 2024–2025, including staff in public health, nursing, and midwifery. Total population (census) sampling was used. Inclusion criteria were being an employee of these health centers during the study period and providing informed consent. Questionnaires with more than 10% missing items were to be excluded; however, no questionnaires met this criterion. All 266 eligible employees participated in the study.

2.3 Instrument

The researcher visited the study sites. Participants were informed about the objectives and importance of the study. Questionnaires were distributed among eligible employees, and clear instructions on how to complete them were provided. Participants were assured of anonymity and confidentiality. Data were collected using the General Health Questionnaire-28 (GHQ-28), a widely used screening instrument developed by Goldberg and Hillier (1979) to identify psychological disorders in various settings. The GHQ-28 assesses mental health status over the past month and focuses on the individual's current condition ("here and now").

The questionnaire consists of 28 items across four subscales: somatic symptoms, anxiety and insomnia, social dysfunction, and depression, with seven items per subscale. Responses are scored on a four-point Likert scale ranging from "much less than usual" to "much more than usual." The GHQ-28 is derived from factor analysis of the original 60-item GHQ and is one of the most widely recognized screening tools in psychiatric research. The validity and reliability of the GHQ-28 have been confirmed in Iranian studies, including those by Palahang et al. (1996) and Yaghubi et al. (1995), with reported Cronbach's alpha coefficients of 0.91 and 0.88, respectively. In previous studies, Cronbach's alpha values were reported as 0.84 for somatic symptoms, 0.85 for anxiety, 0.79 for social dysfunction, 0.81 for depression, and 0.91 for overall mental health, indicating acceptable internal consistency. Items were scored from 1 to 4 (total score range: 28–112). For classification, item scores were converted to the Likert method (0–3; range: 0–84), and a total score > 23 was considered indicative of probable psychological distress.

2.4 Statistical Analysis

Data analysis was performed using SPSS software, version 26. Descriptive statistics, including the mean and standard deviation (SD) for quantitative variables and frequency and percentage for qualitative variables, were used to summarize the data. The normality of the mental health score distribution across categorical variables was assessed using the Kolmogorov-Smirnov test. Independent t-tests were used to compare mean mental health scores between gender and marital status groups. One-way ANOVA was applied to compare mental health scores across different work experience groups.

For variables that did not meet the assumptions of normality, non-parametric tests including the Mann-Whitney U and Kruskal-Wallis tests were employed. The relationship between age and total mental health score was examined using Pearson's correlation coefficient. In all statistical tests, a *p-value* greater than 0.05 was considered statistically non-significant.

3. Results and Discussion

As shown in Table 1, 266 employees participated in the study, with a mean (SD) age of 35.21 (7.14) years and an overall mean (SD) psychological health score of 52.20 (10.29). The study population was predominantly male (80.10%) and married (65.00%), and psychological health scores were generally similar across gender and marital status groups. The majority of participants held a bachelor's degree (95.10%), while those with a master's degree or higher demonstrated higher mean psychological health scores.

As presented in Table 2, no statistically significant differences were observed in psychological health scores across demographic and educational variables. One-way ANOVA showed that work experience was not significantly associated with psychological health scores ($F = 1.27$, $p = 0.286 > 0.05$). Similarly, the Kruskal-Wallis test indicated no significant differences across academic majors ($H = 8.60$, $p = 0.197 > 0.05$). The Mann-Whitney U test revealed no significant difference in psychological health scores between education levels ($U = 1244.00$, $p = 0.291 > 0.05$). Results from

independent-samples *t*-tests showed no significant differences based on gender (t = -0.042, p = 0.967 > 0.05) or marital status (t = 0.601, p = 0.549 > 0.05). In addition, Pearson correlation analysis demonstrated no significant relationship between age and psychological health scores (r = -0.034, p = 0.581 > 0.05).

Table 1. Demographic and Educational Characteristics with Corresponding Psychological Health Score Distributions

Variable	Category	Frequency (%)	Psychological Health SCORE	
			Mean (SD)	Median (IQR)
Gender	Male	213.00 (80.10)	52.18 (9.98)	51.00 (14.00)
	Female	53.00 (19.90)	52.30 (11.53)	50.00 (12.00)
Marriage	Single	93.00 (35.00)	52.72 (10.19)	51.00 (12.50)
	Married	173.00 (65.00)	51.92 (10.36)	51.00 (13.50)
Number of children	1	82.00 (30.80)	51.13 (9.90)	52.00 (13.25)
	2	44.00 (16.50)	52.86 (11.33)	51.50 (17.00)
	3	62.00 (23.30)	50.95 (9.28)	51.00 (15.25)
	4	16.00 (6.00)	52.00 (8.02)	49.50 (10.50)
	5	9.00 (3.40)	50.22 (4.26)	51.00 (7.00)
	6	7.00 (2.60)	46.43 (2.30)	47.00 (3.00)
	7	46.00 (17.30)	56.50 (12.34)	53.50 (14.25)
Education	Bachelor	253.00 (95.10)	51.99 (10.13)	51.00 (13.00)
	Master and above	13.00 (4.90)	56.67 (13.17)	51.50 (15.25)
Work history	1-7	111.00 (41.70)	51.82 (8.98)	51.00 (9.00)
	8-15	82.00 (30.80)	53.94 (11.59)	53.00 (14.25)
	16-23	63.00 (23.70)	50.79 (10.67)	49.00 (16.00)
	24-30	10.00 (3.80)	51.10 (9.71)	50.50 (13.75)
Age (Mean (SD))	35.21 (7.14)	---	---	---
Total psychological health score (Mean (SD))	52.20 (10.29)	---	---	---

Table 2. Results of statistical tests examining the effects of demographic and educational variables on psychological health scores

Variable	Statistical Test	Source of Variation	Sum of Squares	df	Mean Square	Statistics	*P-value*
History	One-way ANOVA	Between Groups	400.72	3.00	133.57	F = 1.266	0.286
		Within Groups	27642.30	262.00	105.50		
		Total	28043.03	265.00			
Major	Kruskal-Wallis Test	-----	-----	-----	-----	Kruskal-Wallis H = 8.60	0.197
Education	Mann-Whitney U Test	-----	-----	-----	-----	Mann-Whitney u = 1244.00	0.291
Gender	Independent Samples t-Test	-----	-----	-----	-----	t = -0.042	0.967
Marriage	Independent Samples t-Test	-----	-----	-----	-----	t = 0.601	0.549
Age and Score	Pearson Correlation	-----	-----	-----	-----	r= -0.034	0.581

The mean psychological health score was 52.18 among men and 52.30 among women. Based on the GHQ-28 cut-off point (a total Likert score > 23), 50.40% of participants were classified as being at risk of psychological distress. This proportion is considerably higher than the prevalence of suspected mental disorders (23.44%) reported in the Iranian national population-based survey conducted in 2015 using the GHQ-28 (Noorbala et al., 2017). However, this comparison should be interpreted with caution owing to differences in study populations and scoring methods.

In the present study, psychological health scores did not differ significantly by education level or age. These findings are inconsistent with those of Abdollahi et al. (2021), who reported higher psychological disorder scores among illiterate participants and those with illiterate spouses, as well as increasing scores with advancing age. This discrepancy may be explained by differences in study populations: they studied married older women with heterogeneous educational backgrounds, whereas all participants in the present study were university-educated healthcare employees with relatively similar training and a narrower age range, which may have limited the variability needed to detect such associations. Similarly, no significant differences were observed by gender or marital status. This finding is inconsistent with Shahbazi et al. (2021), who reported a significant difference in mental health between men and women. This discrepancy might be related to differences in study design and context, as their study compared physically active and inactive individuals during the COVID-19 pandemic. In addition, the relatively small number of women (n = 53) and participants with a master's degree or higher (n = 13) in the present study may have reduced the statistical power to detect differences between subgroups.

Overall, the absence of significant associations with demographic characteristics suggests that other factors, such as occupational stressors, workload, and organizational conditions, may play a more important role in the psychological health of healthcare workers. This hypothesis is supported by Choobineh et al. (2013), who reported differences in GHQ-28 scores between occupational groups of healthcare professionals (dentists and physicians). Future studies are recommended to examine these occupational factors.

3.1 Limitations

This study has several limitations. First, it was conducted only among employees of health centers in Zanjan; therefore, the findings should be generalized with caution to

other settings with different cultural and organizational contexts. Second, data were collected using a self-report questionnaire, which may introduce response and social desirability bias. Third, the cross-sectional design does not allow causal inferences to be drawn. Fourth, the GHQ-28 is a screening instrument rather than a diagnostic tool; thus, the results indicate probable psychological distress rather than clinically diagnosed mental disorders. Finally, potential occupational confounders, such as workload, job position, and work shifts, were not assessed.

4. Conclusion

Based on the findings of the present study, 50.40% of employees at health centers in Zanjan were classified as being at risk of psychological distress according to the GHQ-28 cut-off point. Although no statistically significant differences were observed across demographic variables such as age, gender, marital status, or educational level, the overall mental health status of the staff highlights the need for preventive and supportive interventions. Therefore, it is recommended that appropriate measures be implemented, including periodic mental health screening of staff using standardized instruments with referral of at-risk individuals to counseling services, in-person and online educational workshops on stress management and coping skills, and mental health promotion programs delivered in collaboration with psychologists, to enhance psychological well-being and reduce the risk of mental health problems among healthcare workers.

Authors' Contributions

Hossein Masoumi Jahandizi: Investigation; Data curation; Writing original draft; Writing-review & editing. **Fatemeh Masaebi:** Conceptualization; Formal Analysis; supervision.

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Conflicts of Interest

The authors have declared no competing interests.

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Ethical Considerations

This article was extracted from a research project with the ethics code IR.ZUMS.REC.1403.180.

Using Artificial Intelligence

No type of artificial intelligence was used.

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