

## Research Paper

## Evaluating General Health and Related Factors Among Employed Women in Healthcare Staff: A Cross-sectional Study



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## ABSTRACT

**Background:** One of the main goals of healthcare systems is to maintain and promote women's health. According to the literature, different factors, such as demographic characteristics, occupational status, stress, culture, and epidemics, can affect women's health. This study aimed to determine the health status of employed women and its association with their demographic characteristics.

**Methods:** This analytical, cross-sectional study was conducted on 325 women working in healthcare centers affiliated with Guilan University of Medical Sciences, Gilan Province, Iran, in 2019. After receiving their informed consent, the study subjects were chosen by random group sampling method. The study data were obtained using a General Health Questionnaire (GHQ). Data analysis was performed by the Chi-square test at a significant level of 0.05 in SPSS software, v. 23.

**Results:** The Mean±SD age of the study women was 42.10±8.19 years, and 52.63% of them were nurses, 16.92% physicians, 19.39% midwives, and 11.7% health workers. Based on the present study results, 39.7% of the participants are suspected of having a health disorder or problem. According to the analysis, significant relationships were observed between women's health and variables of age ( $P \leq 0.0001$ ), level of education ( $P = 0.03$ ), occupational status of spouse ( $P \leq 0.0001$ ), income level ( $P = 0.02$ ), and place of residence ( $P \leq 0.0001$ ). Nevertheless, no significant association was found between women's health and marital status and place of birth.

**Conclusion:** Improving the health of healthcare staff requires special attention and appropriate supportive measures. Given the stressful conditions of healthcare staff, cognitive and behavioral interventions to improve work-life balance can enhance their performance regarding patient care while promoting their welfare.

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## 1. Introduction

Women's health has been recognized as an indicator for the development of countries and one of the most important objectives of health systems [1]. Substantial improvements have been made in women's health over the past 200 years [2]. Generally, health is not just a biological matter [3], and factors such as employment [4-6], stress [7, 8], and even demographic characteristics affect women's health [9]. Also, women's health can be affected by the community, culture, and workplace [2]. Women have longer work hours and shorter rests than men [10]. Compared to other society members, women constantly deal with different roles in society and family, making them more vulnerable [4]. Moreover, employed women have less control and lower perception of physical and psychological health compared to men [6, 11]. In 2009, Holmgren et al. conducted a cross-sectional study on 424 employed women. They found a higher level of perceived stress in 10% and 25% of the participants due to lack of stress management and control over demands, respectively. Work-related stress values were significantly associated with an increased chance of disease [12]. Also, healthcare staff is exposed to stress that affects their mental health [8]. For instance, nurses are more exposed to psychological complications caused in the workplace [8, 13], such as sleep disorders, depression, and anxiety [9].

Another research found that 70.3% of nurses had health problems [14]. However, some studies reported that most health disorders are related to social performance [8, 14, 15]. Also, some emergencies, such as the COVID-19 epidemic and working in hospitals that admitted COVID-19 patients, were risk factors for increasing nurses' anxiety [16]. Despite the effect of other variables on health, damage to health might occur through mechanisms of the stress response [17]. In this regard, research showed a higher percentage of suicides among women working in the healthcare sector compared to employed women in other sectors [18]. Moreover, many studies have suggested an association between women's health and age [19-21]. For example, Hosseinpoor et al. found a correlation between women's health and age after controlling their level of education, economic status, occupational status, and marital status [22]. Another factor affecting women's health is education [15, 20, 23]. Because of various goals, engagements, and stress from different sources during education and work, employed female graduates are at a higher risk of cancer [5]. Women with a lower level of education often have more work hours and health prob-

lems [10]. There is a negative relationship between higher education and health self-assessment [24].

Women are also not supported as informal care providers at home or in the community [25]. For instance, female physicians report more burnout than male physicians, which may be due to childcare responsibilities and housework in addition to employment [26]. Experimental evidence of the prevalence and association of psychological disorders with individual mental health problems (e.g., stress, anxiety, and depression) has been widely reported [27, 28]. Nurses are also exposed to various work-related factors that may be associated with an increased risk of mental disorders [8, 13].

Not only poor mental health can be detrimental to nurses, but also it can prevent professional performance and decrease patient care quality [28]. Increased stress in healthcare workers and its short- and long-term impacts affect health, sickness absence, motivation, and productivity [13]. In general, a few studies investigated employed women's health in Iran. Given the importance of the health of employed women and the effect of different factors on their physical, mental, and social welfare, the present research aimed to determine the health status of employed women at Guilan University of Medical Sciences and its association with factors related to women's health. It is hoped that specific evidence is provided at the end of the research to improve policies for employed women's health.

## 2. Methods

This research is a cross-sectional analytical study in which the study population was all female employees working in healthcare centers in Rasht City, Iran, in 2019. The inclusion criteria were female medical staff working in health centers in Rasht with at least 5 years of experience and without physical and mobile disabilities that may affect the study results. The sample size was estimated at 325 using the sample size determination formula, considering a 95% confidence interval and 0.05 error rate. The subjects were selected by the random cluster sampling method. At first, we selected four hospitals from the centers affiliated with Guilan University of Medical Sciences and seven clinics from all healthcare centers of the city. Afterward, the subjects were randomly selected from the staff of the mentioned centers based on the share of each clinic. After receiving informed consent from participants and ensuring them of the confidentiality terms regarding their personal information and voluntary participation in the research, the General Health Questionnaire (GHQ) was completed by all staff willing to participate in the study. The 28-item

GHQ includes four subscales encompassing physical symptoms, anxiety and insomnia, social dysfunction, and depression. Each subscale consists of seven items. In general, items 1-7, 8-14, 15-21, and 22-28 are related to physical symptoms, anxiety and insomnia, social dysfunction, and depression, respectively. Each item is scored on a 4-point scale from 0 to 3. Therefore, the total score of each subscale is 21, and the total questionnaire score ranges from 0 to 84. The total score of the questionnaire is obtained from the sum of its four subscale scores, where lower scores indicate better mental health. Notably, the reliability of the questionnaire was determined by internal consistency estimated at 0.97 for the overall questionnaire and an acceptable level for each of the subscales with a cutoff point of 24 [29]. In the present research, the reliability values of the tool were determined at 0.77, 0.75, 0.80, 0.78, and 0.81 for subscales of physical symptoms, anxiety and insomnia, social dysfunction, depression, and the overall questionnaire, respectively. Data obtained from 325 questionnaires were analyzed with descriptive statistics and the Chi-square test in SPSS software, v. 23.

### 3. Results

The Mean±SD age of the participants was 42.1±8.19 years with an age range of 25-60 years. In total, 52.63% of the subjects were nurses, whereas 16.92%, 19.39%, and 11.7% were physicians, midwives, and healthcare personnel, respectively. Most participants (55.7%) had an MSc, and the majority of the subjects were married (77.6%) and were born in a city (83.1%). Table 1 presents the health status of employed women of Guilan University of Medical Sciences and its association with their demographic characteristics.

According to results, 60.3% of women were healthy, and 39.7% were suspected of having health disorders. Also, a significant relationship was found between age and the health of employed women ( $P \leq 0.0001$ ). Moreover, most women suspected of health disorders (48.1%) were 40 years or older. Furthermore, a significant relationship was observed between the health of employed women and level of education ( $P = 0.03$ ), occupational status of spouse ( $P \leq 0.0001$ ), income level ( $P = 0.02$ ), and place of residence ( $P \leq 0.0001$ ). Nevertheless, no significant relationship was found between women's health and variables of marital status ( $P = 0.74$ ) and place of birth ( $P = 0.58$ ).

In women suspected of health disorders, most disorders were related to social dysfunction (85.8%), anxiety (41.8%), physical symptoms (32.6%), and depression

(15.4%). According to the results, this group of women suffered more from anxiety and social dysfunction (Table 2).

### 4. Discussion

According to the results, 39.7% of the participants working at Guilan University of Medical Sciences had health disorders. In line with our findings, the results of studies performed in Kashan and Qom cities in Iran indicated health disorders in 40% [20] and 37.6% [4] of women, respectively. Also, Perry et al. reported health disorders in 65% of nurses [30] and 70.3% of subjects in another research [14], which are higher compared to our findings. This lack of consistency might be due to the diversity of the participants. Congruent with our findings, the most prevalent disorder in women with suspected health disorder was social dysfunction, anxiety, and physical disorder, in descending order, whereas the least health disorder was depression.

According to the current research results, the evaluated group of women had a higher level of dysfunction and anxiety. Regarding different general health areas, other studies have introduced the most and least problems related to social dysfunction [8, 15] and depression [8], which is consistent with our findings. However, anxiety and physical symptoms [20] and anxiety [4] were recognized as the most and least health-related problems in other studies, which is not in line with our findings. In a study investigating anxiety and depression of nurses working at Guilan University of Medical Sciences during the COVID-19 pandemic, the prevalence rates of anxiety and depression were 38.8% and 37.4%, respectively [16]. The results of this study on anxiety are in line with the current research. But in the case of depression, its prevalence was much higher than in our study, which could be due to the effects of the COVID-19 pandemic and related factors. Demographic characteristics, such as age and marital status, are among health risk factors [9]. Another study has documented the importance of some demographic variables, such as age, gender, and level of education, on work-related stress [19].

According to the present study results, most subjects were 40 years or older, which might be due to one of the inclusion criterion requesting at least five years of work experience. Meanwhile, the healthcare system of Iran mainly uses a temporary workforce with a 2-year post-graduation service commitment. Moreover, there was a significant relationship between the health status of employed women with variables of age and level of education. According to the results, most women suspected of health disorders were above 40 years. In research by Sa-

**Table 1.** Mental health frequency distribution in employed women based on demographic characteristics (N=325)

Demographic Characteristics	Health Status, No. (%)			P*	
	Healthy	Suspected of Health Disorder	Total		
Age (y)	25-29	20(10.2)	20(15.5)	40(12.3)	≤0.0001**
	30-34	19(9.7)	20(20.2)	45(13.8)	
	35-39	19(9.7)	21(16.2)	40(12.3)	
	40≤	138(70.04)	62(48.1)	200(61.6)	
Level of education	Associate degree or lower	14(7.1)	10(7.8)	24(7.4)	0.03**
	BSc	104(53.1)	77(59.6)	181(55.7)	
	MSc	55(28.1)	20(15.5)	75(23.1)	
	PhD	23(11.7)	22(17.1)	45(13.8)	
Place of birth	City	161(82.1)	109(84.5)	270(83.1)	0.58
	Village	35(17.9)	20(15.5)	55(16.9)	
Marital status	Married	152(77.6)	98(76)	250(76.9)	0.74
	Single	44(22.4)	31(24)	75(23.1)	
Occupational status of spouse	Employee	78(39.8)	63(48.8)	141(43.4)	≤0.0001**
	Self-employed	74(37.8)	25(27.2)	109(33.5)	
	Not mentioned (no spouse)	44(22.4)	31(24)	75(23.1)	
Income (Rial)	Below 20 million	127(64.8)	88(68.2)	215(66.2)	0.02**
	20-40 million	34(17.3)	16(12.4)	50(15.3)	
	Above 40 million	35(17.9)	25(19.4)	60(18.5)	
Place of residence	Owner	186(94.9)	104(80.6)	290(89.5)	≤0.0001**
	Tenant	10(5.2)	25(19.4)	35(10.8)	

\* Chi-square test, \*\*P&lt;0.05.



deghi et al., a higher prevalence of health disorders was detected in women aged more than 40 years [21]. On the other hand, a significant association was observed between age [20, 22] and level of education [15, 20, 23], which is consistent with our findings. Nevertheless, no significant relationship was found between the age and health status of the participants [15, 31].

Furthermore, our findings showed a significant relationship between the health status of women and variables of income level, occupational status of spouse, and place of residence. A significant association was reported between women's health and economic status in two studies [20, 21]. On the other hand, anxiety and

stress are related to individual factors, including age and monthly income. Nurses with lower monthly incomes had a higher anxiety level [9]. However, no articles were found on the relationship between spouse occupational status and women's health. Nonetheless, the spouse's occupation may affect women's health by impacting income and economic status.

In a study on the association between mental health and place of residence, subjects with a personal home reported a lower prevalence of psychological disorders compared to those living in rental houses or with relatives [21]. However, our results demonstrated no signifi-

**Table 2.** Frequency distribution of health disorders in employed women based on four dimensions of health

Health Dimensions	No. (%)	
	Healthy	Suspected of Disorder
Physical symptoms	219(67.4)	106(32.6)
Anxiety	189(58.2)	136(41.8)
Social dysfunction	46(14.2)	279(85.8)
Depression	275(84.6)	50(15.4)

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cant relationship between the health status of subjects and marital status and place of birth.

In a previous study, there was no significant association between women's health and marital status [20]. Furthermore, the results of a study indicated no significant correlation between the general health scores of participants and their marital status [4], which is consistent with our findings. Meanwhile, some other studies have demonstrated a relationship between women's health and marital status [30, 31]. Also, a study conducted to investigate the prevalence of corona fear in Filipino nurses reported that married nurses reported more anxiety than single nurses [32], which is not in line with our findings. This inconsistency might be because most of our subjects were married.

Besides, there was no relationship between women's health and place of residence. Meanwhile, Ghazivakili et al. reported a significant association between women's health and place of birth (city or village) [33]. The majority of participants in the current study were born in a city, which may partly explain the difference in results.

Work-related mental disorders, such as stress, depression, and anxiety, have negative consequences on different aspects of employed women's lives [34], and improving the health of these individuals will improve the quality of patient care [26]. Therefore, health system managers should improve the health and wellbeing of their employees. Occupational health promoters can predict work-related stress caused by specific social and demographic variables and help increase staff resilience.

## 5. Conclusion

According to the present study results, more than one-third of the healthcare staff in Guilan University of Medical Sciences had health disorders. In this regard, the most and least disorders were social dysfunction and depression, respectively. Moreover, a significant relationship

was observed between women's health and demographic characteristics, such as age, level of education, and place of residence. Improving the health of healthcare staff requires special attention and appropriate supportive measures. Given the stressful and anxious conditions of healthcare staff, cognitive-behavioral interventions and stress management training can improve the quality of patient care while enhancing personal wellbeing and health care staff performance. Human resource managers, as well as health and safety officials, should help increase psychological awareness so that healthcare staff takes their physical and mental health seriously.

One of the significant drawbacks of the present study was the motivation and honesty of participants when completing the questionnaire, which might have affected the results. Also, the lack of mental disease in subjects was confirmed by self-report. Moreover, since the present study was performed on the medical staff, the results cannot be generalized to other groups of people.

## Ethical Considerations

### Compliance with ethical guidelines

The present research was approved by the Islamic Azad University, Rasht Branch (Code: IR.IAU.RASHT.REC.1397.026).

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### Authors' contributions

All authors equally contributed to preparing this article.

### Conflict of interest

The authors declared no conflict of interest.

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