

The prevalence of personality disorders in nurses: role of the workplace environment



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Abstract

Objective: Personality disorder is a multi-factorial condition in which workplace stress plays a significant role. This study was undertaken due to scarcity of information regarding the role of workplace stress which can cause personality disorder among nurses. We aimed to evaluate the prevalence of personality disorders in nurses working in different hospital departments and assess factors affecting its onset.

Methods: In this cross-sectional study the personality disorders of nurses working in various hospital departments were evaluated based on Minnesota Multiphasic Personality Inventory-2 (MMPI-2) test. After the completion of questionnaires, data were entered to MMPI-2 test's special software and the final result was interpreted based on the opinion of a clinical psychologist. Finally, multivariate logistic regression model was used to assess the independent effect of the mentioned factors on prevalence of personality disorders in nurses.

Results: We gathered data from 2 groups of participants (n = 206). These groups included nurses in emergency departments and nurses in other hospital units. The mean of age was 32.5 ± 6.9 years. Overall, 54.3% (n = 38) of non-emergency nurses and 45.7% (n = 32) of emergency nurses showed symptoms of personality disorders respectively. Multivariate logistic regression analysis showed that history of a serious accident or trauma increased the odds of detecting personality disorders up to 3.8 times (odds ratio [OR] = 3.84; 95% CI: 1.33-11.06; P = 0.01). In addition, an unpleasant incident in the past year increased it up to 2.2 times (OR = 2.23; 95% CI: 1.18 – 4.22; P = 0.01) in both groups.

Conclusion: The present study showed that there was no significant difference between emergency departments and other units of hospitals regarding the prevalence of personality disorders among nurses. Overall, somatization, hysteria, and pollyannaish were the most common personality disorders among the studied population.

Keywords: Personality disorders, Burnout, Professional, Workplace, Nurses

Introduction

The personality characteristics of each person play an important role in their manner of working and efficacy in their workplace. The stress and tension of workplace is one of the most important causes of psychological illnesses. Evidence shows that one fourth of the employed population have experienced some kind of job-related behavioral disorders (1). Benign and stimulant stress can cause enhancement in job performances, but harmful stress can destroy the talent of people in doing their tasks at their workplace (2). In the nursing career, nurses experience stressful events and intense mental pressure due to many interactions and the responsibilities that they have in the health care team. A systematic review showed a 26%-35% prevalence of personality and psychological

disorders among emergency department (ED) nurses due to their job (3,4). These disorders not only affect the personnel's health, but also decrease their competence and the quality of services they provide (5). On the other hand, the proper performance of personnel plays a major role in decreasing the burden caused by accidents and diseases. Thus, increasing patient satisfaction (6,7).

Previous studies have reported the effect of work place in prevalence of psychological disorders in nurses. Personal, family-related, and social factors all exert an effect on the prevalence of these disorders (8,9). Therefore, personality disorder is a multi-factorial condition in which stress of workplace, exhaustion of staff and personal and social factors should be studied simultaneously. Although numerous studies are available in the field of personality



disorders caused by workplace stress, lack of such information in Iran reveals the need for a study in this field. Therefore, the present study was undertaken to evaluate the prevalence of personality disorders among nurses working in different hospital departments and assess factors affecting their incidence.

Methods

This cross-sectional study was undertaken among nurses working in EDs and other hospital units in three educational hospitals in Tehran, Iran.

We used a modified version of Minnesota Multiphasic Personality Inventory-2 (MMPI-2) test containing 71 questions to assess personality disorders. MMPI-2 is a standard questionnaire for gathering a wide range of self-described characteristics. This inventory, representing a quantitative index of individuals' emotional adaptability, shows the attitude of participants regarding their personality traits (10). MMPI test is the most famous and widely used personality questionnaire that has been developed as an objective tool in the diagnosis of mental disorders. This test is a self-evaluation questionnaire with "yes" or "no" answers and has 3 validity scales and 10 clinical scales. Validity scales provide information regarding the subject's approach to the test, while the 10 primary clinical scales are used in the diagnosis of mental disorders. The most valuable use of MMPI-2 is in screening abnormal people generally and determining the severity of the problem specifically (11). Diagnostic layers and scales of MMPI-2 include hypochondriasis, depression, hysteria, psychopathic deviate, masculinity/femininity, paranoia, psychasthenia, schizophrenia, hypomania, and social introversion. To increase the clinical benefit of MMPI, three validity scales are present including lie detection scale, infrequency, and defensiveness as correction or inhibition scales.

The study population consisted of nurses working in hospital departments (emergency and non-emergency wards). The sample was chosen based on simple random technique. In this regard, a list of nurses was prepared and participants were selected randomly. We excluded nurses who did not sign the consent form as well as incomplete or invalid questionnaires based on MMPI-2 test. Demographic data and MMPI-2 test were included in a questionnaire and distributed among the studied population.

Sample size was estimated to be 206 nurses based on 26% prevalence of personality disorders (3), $\alpha = 0.05$, and 6%. However, 5 cases were excluded due to the exclusion criteria. Thus, analyses were done on 102 emergency nurses and 99 nurses from other units. After questionnaire completion, data were entered to MMPI-2 test's special software and the final result was interpreted based on the opinion of a clinical psychologist. Data were analyzed via STATA 11.0 statistical software and the prevalence of personality disorders was reported as frequency and percentage. We used chi-squared, Fisher

exact, and Mann-Whitney tests to assess the relationship of baseline and demographic factors among nurses. Finally, multivariate logistic regression model was used to assess the independent effect of the mentioned factors on the prevalence of personality disorders in nurses. In all analyses, $P < 0.05$ was considered as statistically significant.

Results

Totally, 201 questionnaires were analyzed. We excluded 5 questionnaires as they were not valid based on MMPI-2 scale. All participants were female with a mean age of 32.5 ± 6.9 years (range: 23–54 years). Most participants were married (58.2%) and 199 (99.0%) had an undergraduate degree. 99 (49.25%) participants worked in non-emergency departments (non-ED), and 102 (50.75%) worked in ED. Table 1 reports the relationship of demographic and baseline factors of the studied population with personality disorders. There was no significant difference between the 2 groups regarding the prevalence of personality disorders. Overall, 70 (34.8%) nurses showed symptoms of personality disorders in which 38 (54.3%) of them worked in non-ED and 32 (45.7%) worked in ED ($P = 0.30$) (Figure 1). We observed 79 disorders. Five participants had 2, and 2 participants had 3 personality disorders. The most common personality disorder was somatization with 20 (10.0%) cases. Among these cases, 11 (55.0%) worked in non-ED and 9 (45%) worked in ED. This was followed by hysteria with 8.0% prevalence (33.3% in non-ED vs. 66.7% in ED), pollyannaish with 5.6% (55.0% non-ED vs. 45.0% ED), and depression with 3.5% (57.1% non-ED vs. 42.9% ED). The distribution of these disorders was not related to the department they worked in ($P = 0.89$).

Table 1 shows the relationship between demographic and baseline factors of the studied population with personality disorders. Among the mentioned factors only an unpleasant incident in the past year ($P = 0.01$) and history of serious accident or trauma ($P = 0.007$) had a significant correlation with prevalence of personality disorders. In this regard, 58 nurses reported a serious unpleasant incident, 48.3% of which had personality disorders. On the other hand, only 29.4% of those who had not experienced this were diagnosed with these disorders. History of accident was present in 17 cases, 64.7% of which had personality disorders, compared to 32.1% prevalence in those without this experience.

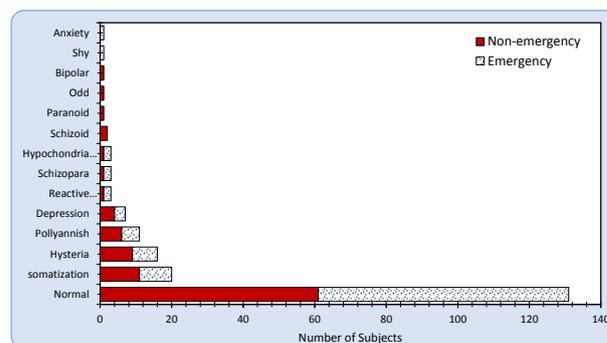
Multivariate logistic regression analysis showed that history of serious accident or trauma increased the odds of detecting personality disorders up to 3.8 times (odds ratio [OR] = 3.84; 95%CI: 1.33–11.06; $P = 0.01$) and an unpleasant incident in the past year increased it up to 2.2 times (OR = 2.23; 95%CI: 1.18–4.22; $P = 0.01$) (Table 2).

Discussion

No difference was found between ED nurses and those who worked in other departments regarding the prevalence of personality disorders. This study showed

Table 1. The relationship of demographic and baseline factors of the studied population with personality disorders

Variable	Personality disorders		P
	Absent	Present	
Age (mean ± SD)	32.3 ± 6.3	33.0 ± 8.0	0.50
Marital status			
Single	53 (64.6)	29 (35.4)	0.95*
Married	77 (65.8)	40 (34.2)	
Divorced	1 (50.0)	1 (50.0)	
Educational level			
Undergraduate	130 (65.3)	69 (34.7)	0.99*
Masters	1 (50.0)	1 (50.0)	
Occupation			
Nurse	120 (67.0)	59 (33.0)	0.32
Head-nurse	5 (50.0)	5 (50.0)	
Supervisor	6 (50.0)	6 (50.0)	
Employment type			
Apprentices	22 (62.9)	13 (37.1)	0.74
Contract	15 (68.2)	7 (31.8)	
Fixed-term	5 (50.0)	5 (50.0)	
Full-time	89 (66.4)	45 (33.6)	
Also works in another center			
No	130 (65.3)	69 (34.7)	0.99*
Yes	1 (50.0)	1 (50.0)	
Working shift type			
Day	12 (52.2)	11 (47.8)	0.13
Night	8 (50.0)	8 (50.0)	
Variable	111 (68.5)	51 (31.5)	
Mean working hours/month	211.4 ± 51.2	202.1 ± 34.6	0.17
Mean working experience (y)	5.0 ± 4.6	6.0 ± 6.2	0.94#
Location of house in Tehran			
North	9 (50.0)	9 (50.0)	0.71
West	38 (67.9)	18 (32.1)	
East	37 (64.4)	14 (32.6)	
Center	29 (67.4)	14 (32.6)	
South	18 (66.7)	9 (33.3)	
Income (dollars)			
270 – 420	39 (60.9)	25 (39.1)	0.39#
> 420	92 (67.2)	45 (32.8)	
Sole breadwinner of the household			
No	121 (64.4)	67 (35.6)	0.55*
Yes	10 (76.9)	3 (23.1)	
History of illness			
No	114 (65.1)	61 (34.9)	0.98
Yes	17 (50.3)	9 (49.7)	
History of drug use			
No	115 (65.3)	61 (34.7)	0.90
Yes	16 (64.0)	9 (36.0)	
History of mental disorders in family			
No	126 (66.0)	65 (34.0)	0.32
Yes	5 (50.0)	5 (50.0)	
A serious unpleasant incident			
No	101 (70.6)	42 (29.4)	0.01
Yes	30 (51.7)	28 (48.3)	
History of accident			
No	125 (67.9)	59 (32.1)	0.007
Yes	6 (35.3)	11 (64.7)	

**Figure 1.** Distribution of the frequency of personality disorders in the studied population based on the department they worked in.

that somatization, hysteria, and pollyannaish were the most common personality disorders among nurses in emergency departments and other departments in the studied hospitals. History of serious accident or trauma and an unpleasant incident happening in the past year were the only effective factors causing personality disorders in the studied population.

The prevalence of personality disorders in the general population has been reported to be 4.4%–10.6% (12-14), which might be related to the role of workplace stress in the onset of personality disorders. Nevertheless, some personality disorders remain hidden and symptoms are only revealed when the person is under workplace stress. Therefore, workplace stress may only be a trigger for manifestation of the hidden disorders' symptoms, and not the cause. This might be the reason that in the present study, the prevalence of personality disorders was not significantly different between ED nurses (highly stressful workplace) and those working in other departments (less stressful workplace).

Mealer et al reported 18% more anxiety and 11% higher depression rates among intensive care unit (ICU) nurses compared to the general population (29% more in total) (15). In our study, the prevalence of anxiety and depression was 0.5% and 3.5% respectively. This difference might be due to the studied population. In this study, nurses were selected from different hospital departments, while in the study by Mealer et al only ICU nurses were evaluated. In the ICU, death and dangerous conditions are more prevalent compared to other departments. Exposure of nurses to death scenes and dying patients for a long time can take a toll on their mental wellbeing. This is supported by the findings of a study that showed emotional responses and psychophysiologic outcomes were more severe in nurses who had witnessed death and serious injuries in comparison with others. Therefore, individuals in this group were more prone to post-traumatic stress disorders (16).

We did not observe a correlation between the departments in which the nurses worked and the presence of personality disorders. In line with this study, Escribà-Agüir et al also showed that there was no evidence that workplace and hardness of work negatively impact presentation of

Table 2. The relationship of demographic and baseline factors of the studied population with personality disorders based on multivariate logistic regression analysis

Variable	OR	95% CI	P
History of serious accident or trauma	3.84	1.33-11.06	0.01
Unpleasant incident in the past year	2.23	1.18-4.22	0.01

Abbreviation: OR, Odds ratio.

burnout syndrome (2). However, Yang et al measured saliva cortisol and expressed that ED nurses had higher levels of cortisol and stress compared to nurses from other departments (17). However, we should note that high saliva cortisol and stress levels are not necessarily accompanied by higher prevalence of personality disorders. Therefore, we contend that ED nurses tolerate more stress but it does not increase the risk of having mental diseases (17). In other words, ED nurses' ability to adjust to stress might have prevented them from developing personality disorders and showing symptoms. Psychological flexibility is a factor affecting mental disorders (15). Presence of psychological flexibility results in a significant decrease in the prevalence of post-traumatic stress disorder, burnout syndrome, and symptoms of depression and anxiety. Therefore, flexibility is a defense mechanism that can increase the ability of nurses and other medical staff to adapt to workplace stresses. Since psychological flexibility can be acquired by training, programs to upgrade the skills of the treatment staff regarding psychological flexibility can decrease the symptoms of mental and personality disorders, and increase job satisfaction (15).

Environmental stressors are among the factors leading to mental and personality disorders (18,19). The findings of this study also showed that history of serious accident or trauma and an unpleasant incident happening in the past year were independent factors that had an effect on the onset of personality disorders in nurses. Therefore, job-related personality disorder is a multi-factorial syndrome which is affected by both workplace and personal life stresses.

One of the limitations of this study was its small sample size. Although the number of cases required was calculated to be 206 nurses but only 201 questionnaires were analyzed as 5 questionnaires were invalid. Notwithstanding, the power of the study was calculated to be 96%, which guarantees the validity of the findings. The nature of evaluating personality disorders is another limitation of this study. In most cases, personality disorders were not a single problem and several diagnoses were made for an individual. Therefore, it is possible that the reported percentages may be different from reality to some extent. In addition, the opinion of the psychologist who made the diagnosis also affected the calculated percentages.

Conclusion

The present study showed that somatization, hysteria, and pollyannaish were the most common personality disorders among the studied nurses. History of serious accident or trauma and an unpleasant event happening in

the past year were the only effective factors in the onset of personality disorders among the studied nurses. No difference was found between ED nurses and those who worked in other departments regarding the prevalence of personality disorders.

Ethical issues

The protocol of the study was approved by the ethical committee of Shahid Beheshti University of Medical Sciences. Written informed consent was obtained from all nurses. All researchers adhered to the principles of Helsinki declaration throughout the study.

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Authors' contributions

All authors have contributed to drafting/revising the manuscript, study concept, or design, as well as data collection and interpretation.

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