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PREVALENCE OF PSYCHIATRIC MANIFESTATIONS IN A SAMPLE OF HEALTHCARE WORKERS DURING COVID-19 PANDEMIC IN AL-AZHAR UNIVERSITY HOSPITALS

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ORIGINAL ARTICLE

Prevalence of Psychiatric Manifestations in a Sample of Healthcare Workers During COVID-19 Pandemic in Al-Azhar University Hospitals

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Abstract

Background: **Health care workers may be particularly vulnerable to adverse psychological outcomes during COVID-19 pandemic.**

Aim of the work: **To investigate the prevalence of symptoms of depression among a sample of Al-Azhar university hospitals doctors and nurses.**

Patient and methods: **This study was conducted on 193 healthcare workers in Al Azhar University hospitals, Cairo. Each participant included in the study was subjected to demographic data collection, assessment of psychiatric symptoms using symptoms checklist scale and semi-structured clinical Interview - DSM-IV.**

Results: **The study showed higher incidences of depressive disorders, anxiety disorders and obsessive-compulsive disorders among female workers followed by female nurses when compared with other study groups with *P* value (<0.001 for all). Incidence of histrionic personality traits was significantly higher among female doctors (*P* value = 0.022). Female nurses had significantly higher incidence of depressive personality traits (*P* value < 0.001). While female workers had significantly higher incidences of paranoid (*P* value < 0.001) and narcissistic personality traits (*P* value = 0.002).**

Conclusion: **During the COVID-19 pandemic, there is an elevated risk of sadness and anxiety among health care personnel. As the length of the pandemic continues, it will be essential for medical personnel to provide continuing psychological monitoring and assistance.**

Keywords: Anxiety, COVID 19, Depression, HCWs

1. Introduction

Major public health crises, such as the COVID-19 pandemic, result in widespread fear and mental health problems, especially among medical staff.[1] Working during an epidemic increases the probability that medical personnel would have psychological and mental sickness, as well as physical and emotional distress.[2] Sources of distress may include feelings of vulnerability or lack of control, as well as concerns about one's own health, the spread of a virus, the health of family and friends, employment changes, and social isolation.[3] Multiple factors have been associated with a variety of mental health issues. Symptoms of worry are most prevalent among medical personnel who have direct clinical contact with infected patients, are suspected cases, or work in the most severely afflicted location.[4]

Despite the fact that a number of studies have analyzed the mental health status of medical personnel during large public health crises, Egypt has been the subject of few investigations.[5–7] Therefore, this study aimed to investigate the prevalence of symptoms of depression among a sample of Al-Azhar university hospitals doctors and nurses during COVID-19 pandemic. So, we included 193

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healthcare workers. The mean age among our study population was 29.99 ± 3.68 years ranging between 18 and 35 years.

2. Patients and methods

The study was conducted on 253 healthcare workers at Al-Azhar University hospitals, Cairo, including doctors, nurses, and workers who fulfilled the inclusion and exclusion criteria. **Inclusion criteria:** Doctors, nurses or workers in Al-Azhar university hospitals. Age between 18 and 35 years. This age group was chosen as they are more likely to spend significant time on the healthcare frontlines. **Exclusion criteria**: Psychiatric patient or receiving psychiatric medication.

At the time of the study, Al-Azhar University hospital Al-Hussein had 242 resident doctors, 431 nurses, and 78 workers who fit the inclusion criteria. 500 forms containing GHQ-12, data confirmation and informed consent were handed out. Of those 500, 253 valid forms were returned. GHQ-12 cut off score of 50% (>17/36) was considered for further assessment. **193 subjects scored above the cut-off point** and were subsequently handed a form containing symptom checklist-90 (SCL-90) and structured clinical interview for DSM-IV personality disorders (SCID-II) Personality questionnaires. Subjects scoring moderate or above on the SCL-90 were then clinically interviewed to confirm the psychometric findings.

Each participant included in the study was subjected to: 1) Stage data confirmation: Explanation of aim of study, taking informed consent, participant demographic data (age, gender, and current occupation) and health status. **2) Psychiatric symptoms assessment: a)** *General Health Questionnaire 12 (GHQ-12).*[8] **B)** *Symptoms checklist scale.*[9] **C)** *SCID-II personality questionnaire.*[10] **3) Clinical interview, under supervision of a psychiatric specialist or consultant.**

The study was done after being approved by the Research Ethical Committee, Faculty of Medicine, Al-Azhar university. Written consent was taken from the participants included in the study.

All data were collected and input into a statistical program on a compatible computer, and SSPS (Statistical package for Social Science) version 20.0 was used to conduct various analyses (SSPS, 2009). The significance level was set at a P value = 0.05 (two-tailed).

3. Results

Age and gender distribution is illustrated in Table 1. Candidates of study were divided according their occupation and gender into 6 main groups: **Male doctor group:** 66 (34.2%) candidates. **Male nurse group:** 12 (6.2%) candidates. **Male worker group:** 8 (4.1%) candidates. **Female doctor group:** 8 (4.1%) candidates. **Female nurse group:** 92 (47.7%) candidates. **Female worker group:** 7 (3.6%) candidates.

Table 1. Demographic data of study population and gender-occupation groups.

Age	
Mean ± SD	29.99 ± 3.68
(Range)	(18.00–35.00)
Sex Count (%)	
Female	107 (55.4%)
Male	86 (44.6%)

Male doctors had significantly higher incidence of phobic anxiety symptoms. Female doctors had significantly higher incidence of interpersonal sensitivity symptoms. Female nurses had significantly higher incidences of somatization symptoms, depression symptoms, hostility symptoms, paranoid ideation, and psychoticism. While female workers had significantly higher incidences of each of obsessive-compulsive symptoms, and anxiety symptoms ($P < 0.001$ for all except psychoticism $P = 0.038$) (Table 2).

Incidences of depressive disorder, anxiety disorder and obsessive-compulsive disorders were significantly higher among female workers when compared with other study groups ($P < 0.001$ for all) (Figs. 1–3).

Incidence of dependent personality traits was significantly higher among male doctors (P value < 0.001). Incidence of obsessive-compulsive personality traits was significantly higher among male nurses (P value = 0.029). Incidence of schizoid personality traits was significantly higher among male workers (P value < 0.001). Incidence of histrionic personality traits was significantly higher among female doctors (P value = 0.022). Female nurses had significantly higher incidence of depressive personality traits (P value < 0.001). While female workers had significantly higher incidences of paranoid ($P < 0.001$) and narcissistic (P value = 0.002) personality traits (Table 3).

4. Discussion

The present study reported that **female doctors** had significantly higher incidences of **interpersonal sensitivity** symptoms (P value < 0.001) and **histrionic personality traits** ($P = 0.022$). Similarly, ***Huang et al.***[11] revealed that the anxiety incidence in female medical staff was higher than that in males. From Egypt, ***Abdelaziz et al.*** also reported that female participants have more distress levels than males.[6]

Table 2. Comparison of incidence of psychiatric symptoms between groups.

	Male doctor Count (%)	Male nurse Count (%)	Male worker Count (%)	Female doctor Count (%)	Female nurse Count (%)	Female worker Count (%)	*P* value
Somatization							
None	47 (71.2%)	12 (100%)	8 (100%)	4 (50.0%)	16 (17.4%)	0	**<0.001***
Mild	16 (24.2%)	0	0	4 (50.0%)	31 (33.7%)	4 (57.1%)	
Moderate	3 (4.5%)	0	0	0	23 (25.0%)	3 (42.9%)	
Severe	0	0	0	0	22 (23.9%)	0	
Obsessive compulsive							
None	43 (65.2%)	8 (66.7%)	4 (50.0%)	8 (100%)	20 (21.7%)	0	**<0.001***
Mild	4 (6.1%)	4 (33.3%)	4 (50.0%)	0	50 (54.3%)	0	
Moderate	19 (28.8%)	0	0	0	11 (12.0%)	4 (57.1%)	
Severe	0	0	0	0	11 (12.0%)	3 (42.9%)	
Interpersonal sensitivity							
None	43 (65.2%)	12 (100%)	8 (100%)	4 (50.0%)	28 (30.4%)	0	**<0.001***
Mild	23 (34.8%)	0	0	0	25 (27.2%)	7 (100%)	
Moderate	0	0	0	0	39 (42.4%)	0	
Severe	0	0	0	4 (50.0%)	0	0	
Depression							
None	59 (89.4%)	12 (100%)	8 (100%)	4 (50.0%)	24 (26.1%)	4 (57.1%)	**<0.001***
Mild	7 (10.6%)	0	0	4 (50.0%)	27 (29.3%)	0	
Moderate	0	0	0	0	27 (29.3%)	0	
Severe	0	0	0	0	10 (10.9%)	3 (42.9%)	
V. severe	0	0	0	0	4 (4.3%)	0	
Hostility							
None	31 (47.0%)	8 (66.7%)	8 (100%)	4 (50.0%)	23 (25.0%)	3 (42.9%)	**<0.001***
Mild	31 (47.0%)	4 (33.3%)	0	4 (50.0%)	45 (48.9%)	0	
Moderate	4 (6.1%)	0	0	0	20 (21.7%)	4 (57.1%)	
Severe	0	0	0	0	4 (4.3%)	0	
Anxiety							
None	55 (83.3%)	12 (100%)	8 (100%)	8 (100%)	24 (26.1%)	0	**<0.001***
Mild	7 (10.6%)	0	0	0	35 (38.0%)	4 (57.1%)	
Moderate	4 (6.1%)	0	0	0	19 (20.7%)	0	
Severe	0	0	0	0	14 (15.2%)	3 (42.9%)	
Phobic anxiety							
None	51 (77.3%)	8 (66.7%)	8 (100%)	8 (100%)	28 (30.4%)	4 (57.1%)	**<0.001***
Mild	8 (12.1%)	4 (33.3%)	0	0	26 (28.3%)	0	
Moderate	4 (6.1%)	0	0	0	34 (37.0%)	3 (42.9%)	
Severe	3 (4.5%)	0	0	0	4 (4.3%)	0	
Paranoid ideation							
None	39 (59.1%)	8 (66.7%)	8 (100%)	0	28 (30.4%)	0	**<0.001***
Mild	24 (36.4%)	4 (33.3%)	0	8 (100%)	19 (20.7%)	4 (57.1%)	
Moderate	3 (4.5%)	0	0	0	42 (45.7%)	3 (42.9%)	
Severe	0	0	0	0	3 (3.3%)	0	
Psychotism							
None	55 (83.3%)	12 (100%)	8 (100%)	8 (100%)	59 (64.1%)	4 (57.1%)	**0.038***
Mild	11 (16.7%)	0	0	0	22 (23.9%)	3 (42.9%)	
Moderate	0	0	0	0	8 (8.7%)	0	
Severe	0	0	0	0	3 (3.3%)	0	

In addition, a study by ***Sehsah et al.*** indicated that female physicians are more likely to experience severe psychological distress.[5] In addition, the vast majority of previous research has indicated that female gender is not only one of the most frequent independent risk factors for a range of psychiatric symptoms but is also associated with higher levels of psychological distress.[3,12,13]

Various authors offered various explanations. Females are more expressive of their emotions, which has been attributed to a gender-related biological or psychological trait, sociocultural risk factors (occupation, marriage, children), and heightened female sensitivity to them.[14]

We found that **female nurses** had significantly higher incidences of **somatization symptoms, depression symptoms, hostility symptoms, paranoid ideation, and psychoticism** (P value < 0.001 for all except psychoticism P value = 0.038). Moreover, **female nurses** had significantly higher incidence of **depressive personality traits** (P value < 0.001). In concordance ***(Lai et al.)***, study also indicated that being a woman and nurse were associated with experiencing severe depression, anxiety, and distress.[3]

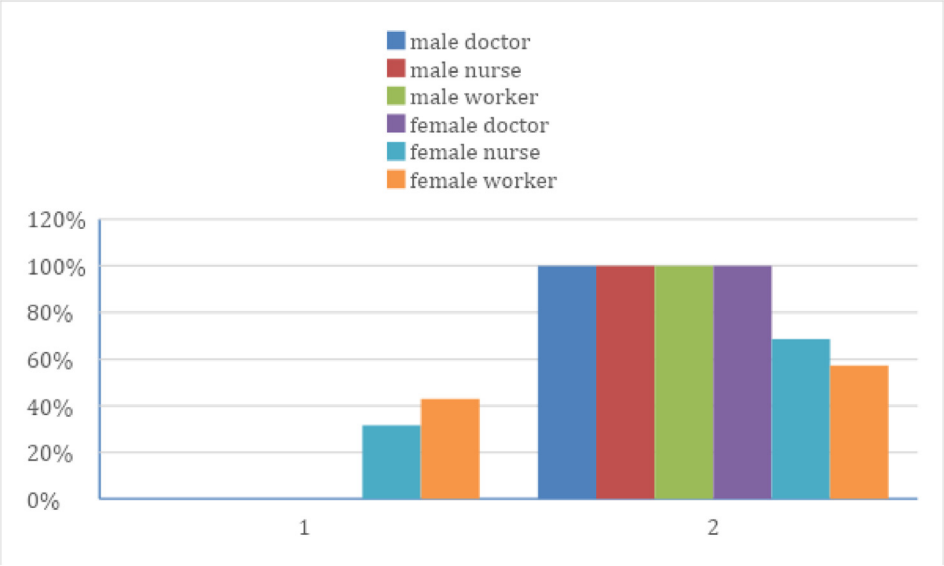

Fig. 1. Prevalence of depressive disorder among different study groups.

Female workers in this study had considerably higher incidences of **paranoid** (P value < 0.001) and **narcissistic** (P value $= 0.002$) **personality traits**. Furthermore, **female workers** had significantly higher incidences of **obsessive-compulsive symptoms**, and **anxiety symptoms** (P value < 0.001 for all). Moreover, incidences of **depressive** disorders, **anxiety disorders** and **obsessive-compulsive disorders** in the present study were significantly higher among **female workers** followed by **female nurses** when compared with other study groups (P value $= 0.004$ for both).

In line with this, ***Zhao et al.*** discovered that the prevalence of mental health condition symptoms was higher among those with a bachelor's degree or less.[15] In addition, they discovered that those with depressive symptoms were more likely to be female and unemployed or to have an entry-level work. Therefore, extra concern must be paid to the mental health of female physicians and nurses who treat COVID-19 patients.

In the current work, **female nurses** had significantly higher incidences of each **somatization symptoms** (***P < 0.001****). ***Liu et al.*** found large gender

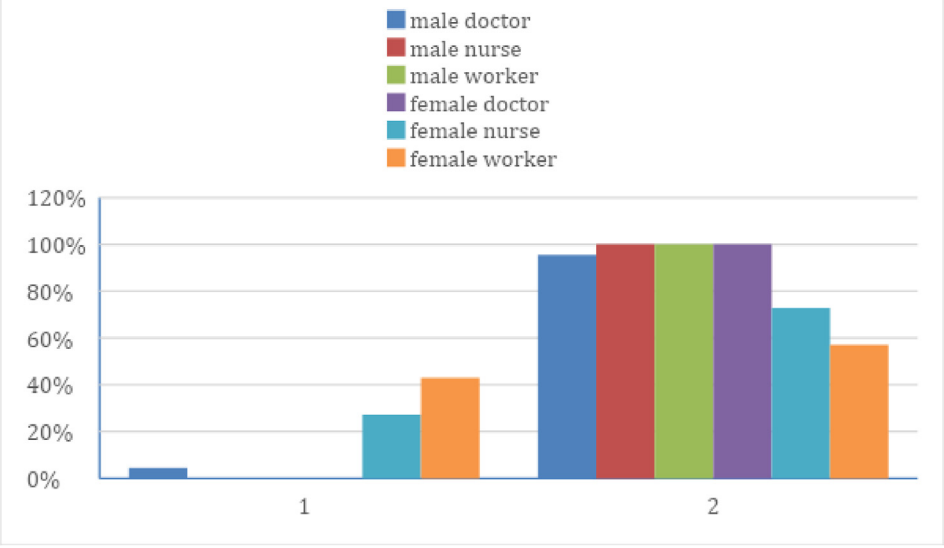

Fig. 2. Prevalence of anxiety disorder among different study groups.

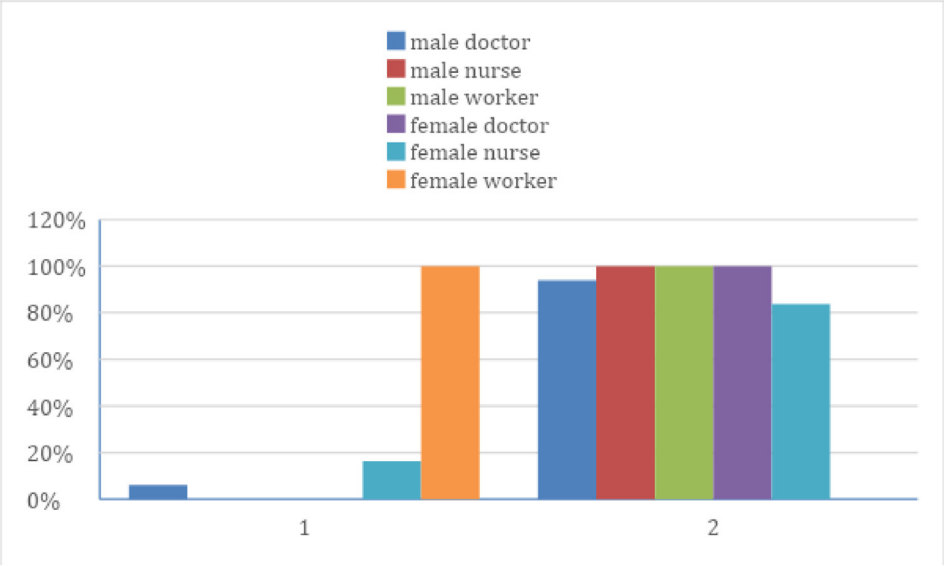

Fig. 3. Prevalence of obsessive-compulsive disorder among different study groups.

inequalities in the occurrence of mental health issues among HCWs during the COVID-19 pandemic, supporting our findings.[16] Various mechanisms have been postulated to explain females' susceptibility.[17]

Song et al. discovered, contrary to our findings, that female gender was a protective factor against somatization symptoms among health care workers. The authors attribute this to the large differences in personality qualities (expression and implication) between men and women.[18]

Psychologically, females exhibit more rumination and are more likely to rely on emotion-focused coping methods, such as self-blame, avoidance, suppression, and a sense of failure, which are associated with higher depression, anxiety, and stress symptoms.[19] **Sociologically**, gender disparities in trauma type, reporting of symptoms, economic resources, social support, and societal roles may contribute to women's greater susceptibility to mental health issues.[20] All of these variables may contribute to or worsen female HCWs' mental health issues.

According to our study, incidence of **dependent personality** traits was significantly higher among **male doctors** ($P < 0.001$). Furthermore, **male doctors** had significantly higher incidence of **phobic anxiety symptoms** ($P < 0.001$). **Malik *et al.*** found that fear of COVID-19 was significantly associated with occupational panic disorder and avoidance behavior. In other words, a strong positive connection existed between fear of COVID-19 and workplace phobia and its subscales (workplace panic anxiety and workplace avoidance behavior). Every association

Table 3. Comparison between study groups regarding incidence of personality traits.

	Male doctor count (%)	Male nurse count (%)	Male worker count (%)	Female doctor count (%)	Female nurse count (%)	Female worker count (%)	*P* value
Avoidant Personality traits	12 (18.2%)	0	0	4 (50.0%)	54 (58.7%)	7 (100%)	**<0.001***
Dependent personality traits	7 (10.6%)	0	0	0	0	0	**0.029***
Obsessive-compulsive Personality traits	27 (40.9%)	8 (66.7%)	0	0	33 (35.9%)	4 (57.1%)	**0.004***
Passive-Aggressive Personality traits	7 (10.6%)	0	0	0	12 (13.0%)	0	0.744
Depressive Personality traits	0	0	0	0	41 (44.6%)	3 (42.9%)	**<0.001***
Paranoid Personality traits	3 (4.5%)	0	0	0	37 (40.2%)	3 (42.9%)	**<0.001***
Schizotypal Personality traits	0	0	0	0	0	0	–
Schizoid Personality traits	12 (18.2%)	0	4 (50.0%)	0	0	0	**<0.001***
Histrionic Personality traits	4 (6.1%)	0	0	4 (50.0%)	8 (8.7%)	0	**0.022***
Narcissistic Personality traits	8 (12.1%)	4 (33.3%)	0	4 (50.0%)	28 (30.4%)	4 (57.1%)	**0.002***
Borderline Personality traits	3 (4.5%)	0	0	0	15 (16.3%)	0	0.131

had a significant effect.[21] This suggests that the more a doctor's fear of COVID-19, the greater their workplace phobia (in general), workplace panic anxiety, and workplace avoidance behavior. If these continue without an effective coping or supporting structure or environment, it may eventually impact their professional performance. Recent research indicates that fear of COVID-19 has significantly damaged persons' professional life.[22–24] During the COVID-19 epidemic, the mental health of healthcare professionals has been significantly impacted.

Incidence of **obsessive-compulsive personality** traits in the present study was significantly higher among **male nurses** ($P = 0.029$). Incidence of **schizoid personality** traits was significantly higher among **male workers** ($P < 0.001$). In line with our finding, ***Lung et al.*** had reported that lower educational degree of health professionals was associated with poorer mental health during the SARS outbreak.[25] In contrast, the relationship in ***Abdelaziz et al.*** study was not significant for the level of education. Employment status as well did not predict the level of mental distress.[6]

4.1. Conclusion

During the COVID-19 outbreak, this study uncovered a substantial risk for depression and anxiety among healthcare staff. As the pandemic continues, it will be of the highest importance for medical staff to provide ongoing psychological monitoring and assistance. Female health care professionals, particularly registered nurses, deserve special treatment.

Disclosure

The authors have no financial interest to declare in relation to the content of this article.

Authorship

All authors have a substantial contribution to the article.

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Conflicts of interest

There are no conflicts of interest.

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