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Assessment of Mental Health of Healthcare Professionals Working in the Infectious Diseases Units: Comparative Study

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Abstract

Background: Health care professionals working in infectious diseases units or hospitals are at higher risk for being affected by certain contagious pathogens than other professional groups through direct contact, equipment, and contaminated supplies; therefore, they are working under ongoing stress that negatively impacting their psychological well-being.

Aims: This study aims to assess the mental well-being of healthcare professionals working in infectious diseases units and compare these results to the score of other healthcare professionals working in other units.

Methodology: A comparative study design using a convenience sample of (*N*=300) healthcare professionals (150 working in the infectious diseases units and 150 working in different units). The General Health Questionnaire-28 was used to assess the mental health of study subjects.

Results: Recent findings indicate a statistically difference between study group and comparative group (p= <0.05), which means that healthcare providers working in the infectious disease units are at higher risk for psychological disturbance than the comparative group. Moreover, other work factors are found to have significant relationship with professionals' mental health, such as infection prevention trainings, years of experience in infectious diseases units, availability of personal protection equipment and hand hygiene, and number of patients in the unit.

Conclusion: Working in high risk work environment increases the concern about personal safety and impose ongoing stress, which negatively influence professional's mental well-being. More training about infection prevention and provide personal protection materials help reducing the risk of disease transmission among patients and to health care providers.

Keywords: *Emotional Intelligence, Work-related Stress, Psychiatric Nurses*

Introduction

Most healthcare professionals are vulnerable to the risks of workplace; especially those who expose to blood, body fluids, and injuries that could be contaminated with infectious microorganisms [15,20]. Death rates are more likely to be higher among healthcare professionals (especially nurses and doctors) who work in infectious diseases units, as a result of their role as frontline professionals in caring for clients with different infectious diseases [14] .Health care professionals working in infectious diseases units or hospitals are at higher risk for being affected by certain contagious pathogens through direct contact, equipment, or contaminated supplies; consequently, they are working under an ongoing stress that affects their psychological health. Working in such units increases the demand on health professionals to increase the quality of hospital care, controlling infection, and protecting themselves at the same time, which impose additional stress and impact the professionals' general health outcomes [4]. The purpose of study is to assess the mental health outcomes of healthcare professionals working in the infectious diseases units and measure the difference in the mental health outcomes among healthcare professional working in the infectious diseases units and other units. Mild stress is consider essential to promote professionals' productivity and responses; however, when the stress level is high, it negatively impact the

health of individuals. Workplace challenges do not often reported to psychological complaints; however, psychological health of professionals is impacted when they are unable to adapt effectively with these challenges. Stress is described an imbalance among the perceived needs, understand resources, and ability to cope with those needs, which can cause physical and psychological distress [11]. Stigma is not only affecting clients with infectious diseases, it is another issue that faces healthcare professional who care for those clients as a result of the possibility of infection transmission to healthcare care employees. Consequently, it is also considered one of the main causes of perceived stress, depression, and anxiety. Professional mental health is directly and indirectly influenced by the stigma associated with infectious diseases through stress [14]. The Importance of risk awareness and patients safety have been indicated in several research. According to [13], "nurses are expected to maintain a high level of awareness towards an infectious disease outbreak and ensure the safety of the public." This critical role highlights the reason behind the high level of stress among nurses who work in communicable diseases units. Identifying the risk factors that cause professional stress among health professionals is a crucial approach to create healthy workplace environment and maintain professionals' mental well-being [6].

Methodology

Study Design and Sampling Plan:

Comparative study design using a convenience sample of 300 healthcare professionals for both groups (150 in the study group and 150 in the comparative groups). Health care providers who participated in this research study were selected regardless of their gender group, specialty, or work time. This strategy was used to clarify the general characteristics of healthcare providers of either group. About 400 healthcare providers received the questionnaire and agreed to be a part of the study; however, only 310 subjects responded to the questionnaire (150) subjects from the first group and (160) subjects from the comparative group. To make the sample size equal in the both groups, 10 subjects were randomly excluded from the comparative group.

Study instrument:

The General Health Questionnaire (GHQ28) is used to assess the mental health of healthcare providers working in the infectious diseases units and the mental health of the comparative group. This scale was a developed as a screening tool to detect those likely to have or to be at risk of developing psychiatric disorders. This screening tool was developed by Goldberg in 1978 [19]. It is a 28-items that is measure a four levels scale ranged from (0 to 4) respectively; 0 indicates no, 1 indicates less than usual, 2 indicates more than usual, 3 indicates more often than usual . The levels of psychological distress among healthcare providers are determined based on the sum of items scores (minimum score 0 and maximum score 84). The cut score is 23/24 and individuals with higher scores are considered having higher level of psychological distress [12] .This scale is includes four subscales in which that each scale consist 7 items, divided as follow: 1) Items (1-7) measure somatic symptoms; 2) Items (8-14) measure anxiety/insomnia; 3)Items (15-21) measure social dysfunction; 4) Items (22-28) measure severe depression. The Arabic version of the scales had good reliability level, Cronbach's alpha level (0.89).

Ethical Considerations

Healthcare professionals were asked for voluntary participation. Research objectives, risks, and benefits were explained to participants to help them decide whether to participate or not. After they agreed to be a part of the study, participants were given anonymous questionnaire to maintain participants' confidentiality.

Results and Discussion

The recent study indicates that there is a statistically significant difference between study group (healthcare providers working in infectious diseases units) and comparative group (healthcare providers working indifferent units) in respect to their mental health. More than half of the healthcare professionals working in the infectious diseases units were symptomatic for psychological distress; whereas, 30% of the comparative group (working in non-infectious units) were symptomatic for psychological distress. [8] indicate that nurses working in high demand or high risk environment anticipated a greater likelihood of developing depression and stress symptoms as a consequence of the continuous concern about their safety. [18] mentioned that healthcare professional who work in hospitals settings are more likely to be vulnerable to depression, and the risk is greater than the risk compared to the general population. However, [9] highlighted that healthcare workers who are in contact with communicable diseases are at higher risk

for stress, anxiety, and depression than other groups of healthcare providers. Moreover, the various types of infectious diseases add to the work stress of healthcare professionals and increase their vulnerability to the risk of infection [2 ,20]. A literature review study was conducted on the workplace factors that influence the psychological health of healthcare professionals involved in caring for clients with various infectious diseases. This research discovered that those employees had higher baseline depression and anxiety than those who care for clients with non-communicable diseases. These psychological effects related to the nature of environment as a high risk, loss of social support (isolation), stress attached to their role, and risk perception [1]. Health care professionals who had direct contact with the affected patients were at great risk for physical and psychological risks. Even though, providers uses personal protection equipment, they still experience barriers of communication and difficulties in diagnosis and caring process, which extent the time needed for each patients and increase the risk for stress. Working in such conditions indicated considerably higher social isolation and felt considerably more vulnerable to somatic symptom, sever anxiety, depression, and fatigue [7]. Analysis of variance (ANOVA) was used to find the differences among healthcare providers in response to psychological disturbances as a result of working in high risk environment. The findings indicate that technicians had the highest mean score than other groups of professionals, which represents their vulnerability to psychological disturbance, followed by physicians and nurses. The study of [17] compared the phenomenon of burnout among healthcare professionals working in the same situation. Researchers indicate a significant difference across professional groups in terms of being subjected to burnout and emotional disturbance. The difference was explained by several factors, including the responsibilities and roles assigned for each group, as well as the type of patients they care for. Being at the frontline in contact with patient can also increase the vulnerability of work stress. In addition, training programs can have positive impacts on reducing work-related stress. Significant relationships were found between psychological health and professionals' working conditions, including training about infection control, availability of the personal protective equipment, and availability of hand hygiene. Several studies have highlighted the importance of providing training for infection prevention and control, as well as the importance of using personal protection equipment for all healthcare professionals working in the infectious diseases units to prevent the potential risk and reduce work stress [10]. The study that carried out by [3] showed that healthcare professionals who had not received infection prevention training were less likely to have knowledge of infection prevention than those who had received infection prevention training. Therefore, lack of knowledge increases their vulnerability to stress. Moreover, training has positive impact on the attitude of the respondents in the study group compared to the control group [16, 3]. Health practitioners need to safeguard themselves with barriers such as gloves, face masks, gowns, protective eyewear and face shields to reduce work-related microorganism transmission. Despite that, the threat cannot be secured completely, such as the threat results from needlestick injury, using personal protective equipment (PPE) regularly can protect both the professional and the patient from potentially infectious body fluids [5]. The research of [21] linked the increased risk for professionals' infection to their noncompliance in using hand hygiene before and after caring process. Most providers of healthcare underestimate the significance of hand hygiene as it is not correctly stressed. As a result, many nurses lack the expertise and resources necessary to promote their compliance. Re-education; therefore, enables them by emphasizing the importance of compliance with hand hygiene, which increases the quality and safety of provided healthcare services. In addition, studies have also shown that personal protection equipment are not all available for healthcare professionals; however, even with the availability of required equipment, some professionals are careless to use the protective materials. Therefore, hand hygiene is critical to reduce the risk of infection transmission among patients and prevent the risk for healthcare providers [3,5].

Conclusion

This study aims to assess the mental well-being of healthcare professionals working in infectious diseases units and compare these results to the score of other healthcare professionals working in other units. Workplace stress has been found in all healthcare providers as a result of various types of stressor factors, which impact their mental health. However, healthcare providers who are in contact with infectious diseases are at higher risk for depression, stress, anxiety, and sleep disturbance than others who work in different healthcare settings. Consequently, feeling stressed and concerned about personal safety impose a negative effect on professionals' mental health. More training

about infection prevention help raising professionals' knowledge and practice of preventing infection from being transmitted to other patients or to the healthcare providers. Likewise, using personal protective equipment and hand hygiene play an important role in reducing the risk of infection among healthcare professionals. Therefore, it is important for healthcare professionals to be aware of the effective strategies that reduce their vulnerability to the risk of infection. More training about infection prevention and provide personal protection materials help reducing the risk of disease transmission among patients and to health care providers, which indeed helps reducing the psychological stress among healthcare professionals.

Table 1: psychological disturbance among healthcare professionals: The study group

Psychological Status	Overall Psychological disturbance		Somatic symptoms		Anxiety\insomnia		Social dysfunction		Severe depression	
	F.	%	F.	%	F.	%	F.	%	F.	%
Asymptomatic	73	48.7	66	44.0	66	44.0	77	51.3	89	59.3
Symptomatic	77	51.3	84	56.0	84	56.0	73	48.7	61	40.7
Total	150	100.0	150	100.0	150	100.0	150	100.0	150	100.0

Table 2: Psychological disturbance among healthcare providers: The comparative group

Overall Psychological Disturbance	F.	%
Asymptomatic	106	70.7
symptomatic	44	29.3
total	150	100.0

Table 3: Difference between study group and comparative group in response to psychological disturbance.

Independent Samples Test						
	Levene's Test for Equality of Variances		`t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Equal variances assumed	31.977	.000	4.833	298	.000	.25113
Equal variances not assumed			4.833	252.522	.000	.25113

Table 4: Mean scores of healthcare providers in response to psychological distress:

Healthcare professionals	Mean	N
Nurse	.8473	84
Physician	.8979	21
Pharmacist and Pharmacist Assistant	.4404	6
Technicians	1.130	39
*The higher the mean score, the higher the risk for mental disturbance		

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the College of Nursing, University of Babylon, Iraq and all experiments were carried out in accordance with approved guidelines.

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