Psychological Fear of Infectious Diseases among Nurses in Emergency Unit

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Abstract

Background: Fear of infection among nurses is a growing problem in the medical field, and it is one of the psychological and social consequences that may lead to a series of negative results

Objectives: This study aims to assess nurses' fears about the risk of infection in the emergency department.

Methods:A descriptive design with a simple random sample of 125 nurses in the Al-Hamza General Hospital emergency department, Al-Diwaniya, Iraq, from Nov 27, 2022, to Apr 10, 2023.Through nurses' self-reporting, a two-part questionnaire was used to collect socio-demographic data, fear of illness, and virus Evaluation (FIVE). "SPSS version 26.0" was utilized for data interpretation. Data were evaluated using descriptive and inferential statistical approaches.

Results: The results reveal that 50.4% of nurses experience moderate fears, fear of contamination and behaviors related to illness and virus fears were high among nurses. In comparison, fears of social distancing and the impact of illness and viruses were moderate.

Conclusions: The overall assessment of fears of infection was moderate among nurses working in the emergency department.

Recommendations: The study recommended providing psychological support to develop emotional resilience through training programs to improve the strategies and skills coping of nurses to reduce their fear of infection.

Keywords:Psychological fear; fear of infection; infectious diseases; nurses; emergency department

Introduction

Fear of infection is a critical factor in health anxiety, protective behaviors, and effective ways to fight illness, and this fear can harm an individual's emotional, cognitive, and behavioral characteristics, leading to unhealthy emotional states(1)and is considered one of the distinguishing features of infectious diseases(2).Healthcare workers(HWs) riskcontracting infectious diseases that can spread to other staff and patients (3). More than 15 types of infections transmitted from person to person have been transmitted to HWs, and these cause crucial morbidity and unusual mortality. Among HWs, nurses are the most susceptible to a high risk of infection (4). A nurse's mental stability may be threatened by the prospect of transmitting the infection from patients; this puts them in a position of fear of the infection (5).

Nurses face stressful situations due to the infectious nature of viruses, such as fatigue, fear of infection, helplessness in dealing with patient conditions, and managing interpersonal interactions(6); therefore, Emergency department (ED) nurses experience the highest level of fear at work due to the potentially dangerous and contagious illnessesthey have to deal with; this fear can significantly impact their psychological status (7).During infectious crises worldwide, many healthcare professionals, especially nurses, are at the forefront of treating infected patients. The high fear of infection among nurses is a growing issue in the medical field, as nurses must work long hours with little rest and limited access to protective equipment, that cause puts Nurses have the highest rates of fear among all medical professionals (8,9).

In recent decades, globalization has caused an increase in infectious diseases. By the end of 2019, one of the new coronavirus families had emerged in Wuhan, China. According to a report from Iraq, over 48 percent ofHWs were infected, and more than 41 percent of infection-related deaths have occurred among nursing staff.The shocking number of health workers who have died from infections worldwide has increased the staff's fear of infection(10–12).

This fear in nurses impacts their capacity to focus, comprehend, and make decisions, which may impact their performance and long-term well-being. Fear of the risk of being infected, disease transmission to

family members, and potentially dying demonstrated that nurses experienced physical and emotional impacts due to concerns for personal and family safety; and fear, susceptibility, and psychological issues (13).

Since infected patients cannot always be identified, all patients must be treated as infectious(14), which puts ED nurses under enormous daily workloads, physiological fatigue, and mental strain, which can lead to nursing mistakes and nurses-patients conflicts(15).

The International Council of Nursesdescribes nurses as the foundation of health systems, but they can only provide the public with high-quality care if their mental health needs are met. Therefore, ICN calls for focusing on nurses' mental health, who are on the front lines, and addressing mental health needs in their practice(16). When a nurse is experiencing psychological stress, care cannot occur(17).

Nurses' negative mental states do cause by fear, anxiety, and stress. These situations may negatively impact nurses' quality of life, which can impact the amount and quality of care provided to patients(18). Regarding Iraq and the effects of emotional distress like infection fear on Iraqi nurses,there is no available data on the psychological effect and mental health of Iraqi nurses delivering first-line care(19).

Methods

A descriptive design was used to assess nurses' fears about the risk of infection in the ED of Al-Hamza General Hospital, Al-Diwaniyah, Iraq, from Nov 27, 2022, to Apr 10, 2023. The probability sample approach (simple random) was used on 125 nurses who completed the questionnaire to achieve the study's objectives; It consists of two parts.

Part I: Socio-demographic Characteristics Include the socio-demographic information of the nurses, such as their age, gender, number of years of experience, educational level, marital status, history of chronic disease, and infection at work.

Part II: The Fear of Illness and Virus Evaluation (FIVE)—Adult Report Form has four subscales with a total of 27 items: fears about contamination and illness (6 items), fears about social distancing (7 items), behaviors related to illness and virus fears (12 items), and the impact of illness and virus fears (2 items) completed by nurses through self-report to assess fears.

Sixteen experts, including 13 from nursing colleges, assessed the instrument's validity, and Cronbach's alpha correlation coefficient was used to evaluate the instrument's internal consistency. The sample participants' data were gathered from Jan 20 to Feb 25, 2023, and the "statistical package for social sciences (SPSS) version 26.0" was used for data analysis. Data were evaluated using descriptive and inferential statistical approaches.

The initial approval of this study was the Scientific Research Ethics Committee at the College of Nursing, University of Baghdad, and the Governoratetate Health Department Research Ethics Committee. Furthermore, the researcher obtained written agreement from the participants after explaining the study, its scope, and its purpose.

Results

List	Characteristics		f	%
1	**Age (Year)**	20 – less than 30	101	80.8
	M±SD= 27 ± 6.7	30 – less than 40	12	9.6
		40 – less than 50	9	7.2
		50 and more	3	204
		Total	***125***	***100***
2	**Gender**	Male	38	30.4
		Female	87	69.6
		Total	***125***	***100***
3	**Years of experience**	1 – less than 6	87	69.6

	M±SD= 5 ± 5.5	6 – less than 11	25	20
		11 – less than 16	8	6.4
		16 and more	5	4
		Total	***125***	***100***
4	**level of nurses' education**	"Secondary school"	71	56.8
		"Diploma"	43	34.4
		"Bachelor +"	11	8.8
		Total	***125***	***100***
5	**Marital status**	Unmarried	51	40.8
		Married	69	55.2
		Others	5	4
		Total	***125***	***100***
6	**Chronic disease**	No	116	92.8
		Yes	9	7.2
		Total	***125***	***100***
7	**Previously infected during work?**	No	74	59.2
		Yes	51	40.8
		Total	***125***	***100***

Table (1): Distribution based on Nurses' Socio-demographic Data

f*: Frequency, %: Percentage*

This table's descriptive analysis shows that the age average for nurses is 27±6.7 years, which are young nurses with the age group of "20-less than 30 years," as reported among 80.8% of them. Regarding gender, the findings indicate that 69.6% of nurses working in the ED are female, and 30.4% are males.

The average nurse's experience in the ED is 5±5.5 years, in which 69.6% of nurses have years of experience from 1less than six years. Regarding the level of education, 56.8% of nurses graduated from nursing secondary school, 34.4% graduated with a diploma in nursing, and 8.8% hold a bachelor's degree or higher.

The marital status means 55.2% of nurses are married, while 40.8% are unmarried. Regarding chronic disease, only 7.2% reported a chronic illness, while most had no chronic illnesses. Concerning previous infections during work, 40.8% of nurses reported they were infected, while the remaining were not.

Table (2): Assessment of The Sub-Scaleof Fear of Illness and Virus

List	**The Sub-Scale of Fear of Illness and Virus**	**Total**		
		Mean	**SD**	**Assessment**
1	Fears about Contamination	14.52	2.729	High

2	Fears about Social Distancing	15.46	3.728	Moderate
3	Nurses' BehaviorsRegarding Illness and Virus Fears	31.06	5.164	High
4	Impact of Illness and Virus Fears	3.86	1.300	Moderate

Total mean scores

1 : Low= 6 – 10, Moderate= 10.1 – 14, High= 14.1 – 18.*
2: Low= 7 – 11.66, Moderate= 11.67 – 16.33, High= 16.34 – 21*
3: Low= 12 – 20, Moderate= 20.1 – 28, High= 28.1 – 36.*
4: Low= 2 – 3.33, Moderate= 3.34 – 4.67, High= 4.68 – 6.*

***SD: Standard Deviation**, Low= 1– 1.66, Moderate= 1.67 – 2.33, High= 2.34 – 3*

Table (2) presents the subscales related to fears. The findings indicate that nurses' fears about contamination were high, as seen by a total mean score of this domain (M±SD= 14.52±2.729), nurses' fears about social distancing were moderate,as seen by a total mean score of this domain (M±SD= 15.46±3.728), nurses' behaviors regarding illness and virus fears were showing highas seen by a total mean score of this domain (M±SD= 31.06±5.164), andthe impact of illness and virus fears show moderate as seen by a total mean score of this domain (M±SD= 3.86±1.300).

Table (3):Overall Assessment ofFear of Infectious Diseasesamong Nurses

***f**: Frequency, **%**: Percentage, **Assess.**: Assessment, **SD**: Standard deviation for the overall score*

Fears	**f**	**%**	**M**	**SD**	**Assess.**
Low	10	8	61.03	10.014	Moderate
Moderate	63	50.4			
High	52	41.6			
Total	***125***	***100***			

****Low** = 27 – 45, **Moderate** = 45,1 – 63, **High** = 63.1– to 81*

Table (3) shows that 50.4% of nurses experience moderate fears(M±SD= 61.03 ± 10.014), 41.6% experience high fears of infection and 8 % experience low fear of infection.

Discussion of Results

Nurses' Socio-demographic Characteristics

The data analysis results in table (1)revealed that 80.8% of the study sample, which consisted of 125 nurses working in the ED, was in the age group (20-less than 30 years). This result aligns with a study conducted in Iran to investigate the nurses' fear of coronavirus disease; most were an average age of 26-30 years; this can be attributed to health institutions' policies that place young nurses in ED, requiring physical effort in addition to knowledge and clinical practice(20).

Regarding the gender of the nurses, this study indicates that 69.6% of nurses working in the ED are female, and 30.4% are males. This finding is supported by the findings of a study of 516 emergency nurses, the majority of whom were females (76.16%) (21). The reason is that educational institutions of nursing in Iraq accept female students at a higher ratio than male students.

According to the study's results, the average number of years of experience for ED nurses is (5–5.5 years), and

69.6% have less than six years of experience.This result is similar to (22), whichreveals that Nurses' mean work experience of 6.48 ± 5.28 years was in, but this result differs from the results of(23), which exhibits that one-third of the study's nurses (32.3%) had 1-5 years of experience; this is because the emergency units include young nurses and newly appointed nurses with average work experience.More years working in nursing leads to more experience(24).

Concerning the level of education, 56.8% of nurses graduated from nursing secondary school, which is consistent with a study finding conducted in China that indicates 67.8% of nurses had the professional title of primary(25); this can be attributed tothe preference for nursing secondary school because the study period is short and employment is quick.

Regarding marital status, 55.2% of nurses are married, while 40.8% are unmarried. The results of the current study agree with the results of other studies: 58.6% of nurses were married (22); More than half of the nurses were married (23); 59.1% of nurses were married (20).According to thisresult, the proportions of married nurses were natural and conformed to societal and religious norms.

Regarding chronic disease, only 7.2% reported having chronic illnesses, while most remaining did not; this agrees with a study (20)that showed that (84.7%) of nurses had no history of chronic medical conditions, while 15.3% had an infection. Another study was done in Indonesia to examine how the pandemic affects ED nurses' mental health findings show that only (15.3%) of nurses' in emergency had chronic health conditions(26); this is because most nurses in the study were young and had chronic diseases at this age are limited and rare. Chronic diseases are limited and rare in young age groups and rise with age (27).

Concerning previous infections, 40.8% of nurses reported they were infected during work, while the remaining were not. A study in Canada explored how caring for COVID-19 patients affects nurses' chronic fatigue, quality of care, job satisfaction, and intention to quit their organization and profession. During work, 49.6% of nurses reported getting infected or having a team member affected(28). Another study in Addis Ababa found that 79.8% of emergency room and intensive care unit nurses had been exposed to blood and body fluids more than once a year, and 19.3%, 8.2%, and 6.9% of them were positive for HIV, HBV, or HCV(29).The researcher thinks this is because emergency nurses are more likely to get sick with infectious diseases than nurses in other departments. In addition, many are not committed to personal protection equipment or are unaware of the basics of infection control and prevention.ED nurses must deal with potentially dangerous and contagious illnesses (7). Approximately 40% of ER nurses did not utilize personal protective equipment as recommended (30).

Nurses' Fears, according to the Subscale of Fear of Illness and Viruses

Table (2) presents the subscales related to fears. The findings indicate that nurses' fears about contamination were high; a Canadian cross-sectional survey assessed HWs showed that HWs were more likely than other workers to wash their hands compulsively (35.3% vs. 29.3%), that was due to fears of contamination, dirt, germs, and viruses (31).Another survey in Turkey on 817682 healthcare employees, including 24.2% of nurses/midwives, indicated that 86.9 percent of the health employees participating in this studyfeared contamination(32). The researcher thinks contamination fears have many causes, including nurses avoiding germs and viruses to protect themselves and their families, and that a lack of training and personnel protection equipment are contributing factors. In addition, the ED is the most contaminated in the hospital. ED has many chances for ambient surfaces and medical equipment to get contaminated(33).

Regarding fears of social distancing, the nurses' fears were moderate. A study in Bangladesh used the Health Belief Model to examine HWs' compliance with infection control practices. Results showed that nurses with high scores on perceived benefits, perceived risks, cues to action, and self-efficacy scales and low scores on perceived barriers scales had significantly higher compliance (34).Another study was done in Turkey to assess the association between type personality features, anxiety, depression, and fear-related disease and the virus among 194 healthcare employees (including 76 nurses); results indicated fears about social distancing were higher rates among healthcare professionals with Type D personalities compared to individuals without Type D personalities (35).

The researcher believes that social distancing behaviors can harm nurses' mental health due to their job responsibilities, humanitarian responsibilities, and lack of institutional capabilities. Nurses' psychological and emotional well-being, as well as their ability to do their jobs, may be negatively impacted by social distancing(36).

Nurses' behaviors regarding illness and virus fears were showing high. This result confirms Rogers' (1975) "protection motive theory" of fear appeals and changes in attitude, which states that people will defend themselves depending on danger, situation severity, and response options. HWs adapt to this appraisal by counting on what they sense as efficient and acceptable response options and whether they think they can and are ready to adhere to those behaviors(37). A studywas conducted in Iraq to evaluate healthcare professionals' behaviors and compulsions during the COVID-19 epidemic; according to the findings, 42% of healthcare professionals suffer from a moderate compulsive disorder(38).The researcher believes that a high prevalence of behaviors related to illness and virus

fears among nurses is associated with fear of infection. Preventive health behaviors were strongly associated with the fear of infection(1).

The impact of illness and virus fearswas moderate among nurses. Results of a study aimed to describe fear amongED nurses and physiciansin Finland demonstrated that the medical staff's fear exhibited long-lasting psychological reactions(7). Another study on Saudi Arabian nurses depicted that most nurses, 49.7%, had a moderate mental score, while just 14% had low levels. This finding suggests that nurses have a moderately positive perception of their psychological health and that mental health levels differ in different work environments (23).

The researcher thinks nurses' fear of infection impairs their feelings and mental health and can cause many mental problems, like anxiety and stress.Fear of infection affected emergency nurses' mental health directly and indirectly(21), andhigher levels of fear ofinfection were associated with increased psychological distress(36).

Assessment ofFear of Infectious Diseasesamong Nurses

Table (3) shows that 50.4% of nurses experience moderate fears, 41.6% experience high fears of infection and 8 % experience low fear of infection.A study in Saudi Arabia revealed that 45% of nurses reported feeling only moderate fear, while only 15% reported high fear(23).Anotherstudy was carried out in Iraq to assess the psychological conditionof nurses, including depression, anxiety, and fear of infection, among nurses who care for patientswith coronavirus; findings of this study concerning fear of infection indicated that 55% of nurses have low fear of infection, whereas 29% have a moderate fear of infection(39)

Another study was conducted to investigate mental health (burnout, anxiety, depression, and fear) and related variables among 2110 Frontline nurses caring for COVID-19 patients in China; It was shown that 28.0% of nurses experience moderate fear, whereas 63.2% have a severe fear of infected (40) while a studyin Poland conducted to examine needlestick injury-related Health care workers behaviors (NSIs) showed that 16,3 % of health workershad a long-term fear for their health, whereas 25.9 % experienced a mild fear of workplace infection(41).

The nurses' previous experiences contracting infectious diseases while working in the ED explain moderate fear of infection.ED nurses have to deal with potentially dangerous and contagious illnesses, so fear of infection can significantly impact the psychological status they experience(7). In addition, the ED is the first gate that receives various patients whose medical history is unknown. ED nurses are the first medical personnel to treat patients with novel infectious diseases (42).

Conclusion

The study concluded that fear of contamination and behaviors related to illness and virus fears were high among nurses. In contrast, fears of social distancing and the impact of illness and viruses were moderate.The overall assessment of fear of infection was moderate among nurses working in the ED.

Recommendations

The study recommended providing psychological support to nurses, improving their coping strategies, and emphasizing preventive commitments. Furthermore, broadening the scope of the study with other variables and instruments to improve and generalize the results and conduct studies in this area on other professions.

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