

## Evaluation nurses' knowledge about prevention of nosocomial infections in Al-Basrah Teaching Hospitals, Basrah, Iraq

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**Objectives:** To evaluate nurses' knowledge of nosocomial infection prevention.

**Methodology:** This descriptive cross-sectional study was conducted in Al-Basrah city at Al-Basrah Teaching Hospitals from October 24th, 2021, to April 13th, 2022. The participants of study were 100 nurses. The study's instrument, a pre-designed questionnaire, was used. The questionnaire was divided into two sections that covered sociodemographic information and understanding of nosocomial infection prevention. Descriptive and inferential statistics were employed.

**Results:** Women made up the majority of the study population (57.0%), were more men to be in their 20s

or 30s (66.7%), have nursing degrees (45%), and had one to five years of work experience (50%). The majority of them (84.0%) had previously undergone nosocomial infection-related training. A lack of association existed between total nurses' knowledge of nosocomial infection prevention and demographic characteristic, but there was a significant correlation within gender and this information ( $p=0.05$ ).

**Conclusion:** The study concluded that the nurses lacked adequate understanding of nosocomial infection prevention.

**Keywords:** Evaluation, knowledge, prevention, nosocomial infections.

### INTRODUCTION

Nosocomial infections (NI), also known as inpatient acquired illnesses, appear 48 hours after hospital admission, three days after discharge, or thirty days after surgery. Millions of individuals experience nosocomial infections every year. Normal transmission routes for NI include those between patients, between patients and healthcare professionals, between healthcare professionals and patients, between patients and medical and surgical devices, and between patients and the environment.<sup>1,2</sup>

In all civilizations, hospital acquired infections (HAI) are a significant source of health issues. The WHO estimates that there are 7.1 million HAI cases each year and 99,000 deaths result from this each year.<sup>3</sup> Hospitals and other healthcare institutions are where NI or HAI are acquired. Globally, NI are leading reasons of death and rising morbidity in hospitalized patients.<sup>4,5</sup>

When it comes to managing nosocomial diseases, healthcare professionals are faced with a challenging conundrum. Urinary tract infections, illnesses of wounds from surgery, and pathogens of the lower respiratory tract are the most common NIs. Majority of NIs occur in critical care facilities.<sup>6,7</sup> NI has short and long term effects, including lengthened hospital stays, chronic diseases, mortality, and morbidity as well as temporary and permanent dysfunction and excessive therapeutic activity, all of which result in significant cost overruns for the healthcare system.

Infection prevention can assist to avoid NI and lower medical expenses. Development of infection control guidelines has helped medical professionals give patients high-quality care.<sup>8</sup> Transmission of germs must be avoided in order to guarantee the security of both patients and healthcare professionals. Techniques for avoidance and management of viruses are used in the workplace, home, and humanity, and healthcare environment to prevent the spread of infectious diseases.<sup>9-12</sup> The aim of this study was to evaluate nurses' knowledge of NI prevention at our institution.

### METHODOLOGY

This descriptive cross-sectional study was carried out from November 24th, 2021, to April 13th, 2022 at the healthcare, surgical, emergency, pediatric, intensive care, and maternity departments of Al-Basrah Teaching Hospitals, Al-Basrah. We used non-probability (purposive) sampling technique and 100 nurses participated in the study and completed the assessment. The study was approved by the ethics committees of the University of Basrah's and Al-Basrah teaching hospitals and all qualified nurses provided informed written consent.

The survey was divided into two sections: demographic characteristics, which included six items gender, age group, academic qualification, years of work experience, working area, and prior training in the prevention of nosocomial infections, and knowledge of the topic.

Fifteen Items on the knowledge test were evaluated with two for yes answers and one for no answers. The validity of the tool was established by seven experts from different scientific fields from the Basrah University who had at least seven years of experience in their field of work. A few things have undergone minor adjustments, like changing the demographic information and the nurse's understanding of nosocomial infection avoidance.

**Statistical Analysis:** The data were analyzed using SPSS version 23.<sup>13,14</sup>  $p < 0.05$  was considered statistically significant.

**RESULTS**

Out of 100 participants, 57 (57.0%) were female and in the 20 to 29-year-old age range (66.7%), with a nursing degree (45.0%), between 1 and 5 years of work experience (50.0%), and a high percentage (57.0%) of females (Table 1).

Table 2 shows healthcare worker's overall degree of knowledge about NI prevention, as measured by the total means of score (1.49), was low. The nurse's knowledge about NI was poor at some items and good at other items. There is no significant correlation between total nurses' understanding of NI and demographic information. However, there was a strong correlation

**Table1: Socio-demographic characteristics of study sample.**

Item	Classification	Number	(%)
Gender	M	43	43.0
	F	57	57.0
	Total	100	100.0
Age group	20 – 29	56	56.0
	30 – 39	25	25.0
	year and above	19	19.0
	Total	100	100.0
Academic qualification	Diploma	45	45.0
	Nursing institute	24	24.0
	Bach-nursing	31	31.0
	Total	100	100.0
Experience years in practice	1 – 5	50	50.0
	10 – 6	25	25.0
	above 10	25	25.0
	Total	100	100.0

**Table 2: Evaluation of the nurse's nosocomial infection understanding.**

Statement	Yes	No	M.S
	Frequency	Frequency	
Nosocomial infections are those whose growth is encouraged by a medical setting.	70	30	1.7
The suggestions for patient and nurse protection are part of the precautionary standards.	60	40	1.6
It is advised to wash your hands before and after handling patients or before touching them.	55	45	1.55
Glove use is advised by the recommended safety measures. When there's a chance of getting removed.	22	78	1.22
When there is a chance of splashes or sprays of blood and bodily fluids, the medical staff must put on protective clothing.	39	61	1.39
Commonly seen hospital acquired infection in urinary tract infection word	25	75	1.25
The atmosphere is one way that nosocomial infections are spread "air, water, inert surfaces".	47	53	1.47
My choice regarding the personal safety gear I choose will be influenced by patient history.	40	60	1.4

By cleaning your hands prior to and after engaging with clients, you can prevent infection.	80	20	1.8
When performing surgical operations, surgical masks must be worn to help avoid infection.	60	40	1.6
Factors influencing the nosocomial infection is microbial agent	66	34	1.66
Chlorhexidine is bacteriostatic	45	55	1.45
Steps that effective hand washing was 6 steps	40	60	1.4
The portals of entry for microorganisms in intravenous catheter system was insertion site	63	37	1.63
Hand washing is effective when rubbing hands together for 20 seconds.	42	48	1.32
Total			1.49

between gender and overall nurses' understanding of NI (Table 3).

**Table3: Relationship between the nurses' expertise and demographic information.**

Variable	Patient's Knowledge	Statistics
Gender	P-corr	.205
	Sig	.040
	N	100
Age	P- corr	.041
	Sig	.686
	N	100
Academic qualification	P-corr	.090
	Sig	.373
	N	100
Specialty	P-corr	.096
	Sig	.340
	N	100
Previous training about nosocomial infection	P-corr	.088
	Sig	.385
	N	100

**DISCUSSION**

Majority of the sample was female, more of them were in the 20–29 age range, most had nursing degrees, their years of work experience ranged from 1–5, and most had prior NI training. This is in line with a previous

research<sup>15</sup> in terms of training course and years of expertise, but not in terms of gender, age group, or educational level.

The study's overall mean score of 1.49 indicated that the participants' expertise was lacking. This outcome was in line with a study,<sup>16</sup> which reported that participants' knowledge of NI was mixed, with some participants having excellent knowledge and others having poor knowledge. We found that there was no relationship between nurses' knowledge and age, educational background, specialty, or previous training, but that there is a significant relationship between gender and knowledge.

This was consistent with a previous research,<sup>17</sup> which found no significant correlation between the other variables (age, scholastic background, specialty, and prior training) and participants' knowledge. Instead, they found a significant correlation between participants' gender and their nursing knowledge.<sup>18</sup>

**Author Contributions:**

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