Nurse - Midwives Competence Regarding Infection Control in Labor and Surgical Rooms

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Abstract
Objective of study: to evaluate the knowledge and skills of nurse-midwives' in infection control Methodology: A cross sectional descriptive study was undertaken with a total coverage sample of (50) nurse-midwives' from labor and surgical room of the Bint Al-Huda hospital from 19 January 2022 to 30 April 2022. The validity and reliability of a questionnaire are evaluated through a pilot study. Data was collected by an interview and observational tool, and descriptive and inferential statistical techniques were used to evaluate the results. A created questionnaire was designed and produced for the study's aims, and data was gathered utilizing an interview approach. Results: The survey revealed that the greatest age range (20-25 years and above) made up 48% of the total, that 50% of the study sample had earned a diploma, that the highest proportion of participants (44%) had experience working in maternity hospitals for between 6 and 10 years, and that 26% were male (11-15 years), Most of them have high performance and awareness of non-infectious waste management and hand washing. Less than one third of respondents demonstrate knowledge of eradicating sources of infection and responsibility for infection prevention and control. Less than one third also demonstrate performance when it comes to donning and donning gowns. Less than half of respondents demonstrate satisfactory performance when it comes to hand washing and wearing sterile gloves. Less than half, however, demonstrate inadequate performance when it comes to managing sharp waste. More than half of respondents demonstrate inadequate performance when it comes to donning and donning gowns. Recommendation: Educating and certifying nurse midwives will increase their general knowledge and practical abilities, making them better midwifery nurses, programs for nurses and midwives to enhance their performance in labor rooms based on infection control precautions and for the purpose of infection control precaution, hospital management should set up ongoing training programs for nurses and midwives.
Keywords: Nurse- midwives, competence, Infection, control, labor and Surgical Rooms

1. Introduction

To enhance the standard of patient care and staff occupational health, an efficient risk management program must include infection prevention and control as a key component. Legal requirements exist to safeguard patients, employees, and visitors from harm in addition to the clinical necessity to stop the spread of health care-associated infections. (Annual report of Maternal death review committee 2016.)

The number of infections in the intensive care unit is significant and causes major medical issues. Nosocomial infections, originally described as infections occurring after 48 hours of hospital admission, are commonly used to describe illnesses acquired during the hospital stay. Infections Nosocomiales Nationwide An unpleasant reaction to the presence of an infectious agent or its toxin that was not present or incubating at the time of admission to the hospital is what is referred to as a nosocomial infection by surveillance systems. This illness can be localized or systemic. These infections are opportunistic, and hospital patients with compromised immune systems can potentially develop sickness from low pathogenicity bacteria. Consequently, under these situations, antibiotic resistance rises, leading to an increase in morbidity and death. The cause of nosocomial infections, which are often exogenous, might be any component of the hospital environment, including patients, staff, visitors, patients' belongings, food, drink, and air. (John &Burke, 2015)

Infection signifies a host-organism relationship. Staphylococci on the skin may be present in a patient with S. aurous colonization without causing any skin irritation or disruption. S. aurous may penetrate the wound if the patient had an incision, triggering an immunological response that would cause local inflammation and direct white blood cells to the area. White cells seen on the wound sample smear in the lab and clinical signs of redness, heat, and discomfort point to infection. The host in this instance recognizes the staphylococci as alien. By monitoring the host's response and identifying the organism, infection can be detected. personal coping behavior's. (Karen &Dr Mike, 2015)

As a result, infection management is essential to patient safety. I discuss the areas where these two disciplines have a lot in common in this essay. Additionally, I go through the main issues with infection control, possible remedies, the National Nosocomial Infections Surveillance (NNIS) System of the Centers for Disease Control and Prevention (CDC) as a role model, and the requirement for

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updated (Usually ventilator-associated) One-fourth of nosocomial infections involve patients in critical care units, and over 70% of these infections are caused by germs that are resistant to one or more antibiotics. This developing public health catastrophe is mostly caused by the indiscriminate use of antibiotics. (Stone et al., 2015)

The establishment of agency-wide policies and program direction is the responsibility of nurses with expertise in infection control. As medical technology advances and more gadgets that disturb the body's natural defenses are utilized, the danger of infection rises noticeably. Staff nurses play a significant role in risk reduction by being mindful of hand cleanliness, ensuring cautious administration of prescription antibiotics, adhering to protocols to lower the hazards associated with patient care equipment, and identifying organisms. Infections from nosocomial sources occur in 2 million hospitalized patients annually in the US. The predicted rise in the senior population results in an extra 240 000 persons per year becoming infected in long-term care institutions; by 2005, this number may reach over 750,000. By identifying organisms, the CDC predicts that. Over the past thirty years, the importance of infection control has increased. Like other fields of study, infection control research is always evolving. An intensive care unit is one of the hospital wards that is essential in the treatment of many serious diseases that require special care. Despite playing a significant part in the treatment of patients with infections, intensive care unit infections can result in complications, mortality, and higher costs for patients and society. (Goodman et al., 2016)

The majority of difficulties impacting hospitalized patients today are nosocomial, or hospital-acquired, infections (more accurately referred to as health care-associated illnesses). In fact, the Harvard Medical Practice Study II discovered that the second-largest group of adverse events was made up of only one form of nosocomial infection, surgical-wound infection. When a statewide epidemic of hospital-based staphylococcal infections occurred in 1957 and 1958, nosocomial infections quickly fell under the purview of public health officials. Since then, the field of public health, with its focus on monitoring and epidemiologic methodologies, has had a significant impact on the research of and control of nosocomial diseases. Therefore, infection control is a crucial part of patient safety. In this post, I discuss the areas where these two disciplines have a lot in common. Additionally, I go over the main issues with infection control, strategies for solving them, the National Nosocomial Infections Surveillance (NNIS) System of the Centers for Disease Control and Prevention (CDC) as a model, and the necessity of a renewed commitment to and innovations in infection control to help ensure patient safety (Dann, 2016)

Infection control-focused nurses are in charge of agency-wide policy creation and program management. As patient care equipment grows more complicated and as the number of devices that obstruct naturally protective anatomical barriers rises, the risk of infection rises noticeably. Staff nurses play a significant role in risk reduction by paying close attention to hand cleanliness, making sure prescribed antibiotics are administered carefully, and adhering to protocols to lower the hazards associated with patient care equipment. (Melissa et al., 2013)

From the start of labor until two to six hours following the delivery of the fetus and placenta, expectant women stay in labor rooms. During this period, a little surgical procedure may be required to deliver the fetus and placenta. In this context, strategies and practices intended to reduce the risk of transmitting illnesses are referred to as infection control. (Dann, 2016)

2. Methodology

Design of the Study

A cross sectional descriptive study of (50) nurse-midwives' were distributed between 19 January 2022 and 30 April 2022 in Bint Al-Huda hospital.

Settings of the Study

The present study is conducted in Thi-Qar Governorate; Bint Al-Huda Teaching Hospital in labor room and surgical room during morning, evening and night shift

Sample of the study: which include

Inclusion Criteria are

A purposive" Non-probability" sample of (50) nurse-midwives'. These nurse-midwives', who work labor and surgical room in Bint Al-Huda hospital

Exception standard are

Nurse-midwives' who were not present at the time of the data collection were unable to do so.

Instrument that Used for Data Collection

The aim of the structure questionnaire was to collect the data required for this analysis, first the sociodemographic data of the nurse midwives, such as age, employment, experience, second part consists of level of knowledge and third part performance of nurse midwives. An observational check list was created to test the efficiency of the participant

Data collection

Data was verbally consented to be gathered throughout the post-shift and after-noon shift during the rest period. Each participant had the option of just filling out the form and being rejected. Also

missing from the holiday season are nurses. The second step in using an observational check list to collect data

3. Results

Table 1: Socio-Demographic Characteristics (n=100)			
Variables	Frequency	Percent	
1- Age (years 20– 25)	24	48%	
26-30	10	20%	
31 – 35	10	20%	
36 – 40	6	12%	
Total	50	100	
2- Educational status	Frequency	Percent	
Diploma	25	50%	
Bsc degree	13	26%	
Master degree	2	4%	
Others	10	20%	
Total	50	100%	
Variables	3-Duration of Nurses-midwives experience in Maternity hospital		
	Frequency	Percent %	
1 - 5 years	5	10%	
6 – 10 years	22	44%	
11 – 15 years	10	20%	
16 – 20 years	13	26%	
Total	50	100	
Current Work place	Operation room	27	54
	Labor room	23	46
Previous site of working	Surgical ward	6	12
	Emergency ward	20	40
	Pediatric ward	16	32
	Other	8	16
Did know before about Infection control	Yes	50	100
	No	0	0
If yes who are the source	Physician	22	44
	Nurse	6	12
	Relatives	10	20
	Friend	12	24
Did previously participation in any course about Infection control?	Yes	0	0
	No	50	100
Immunized against hepatitis B in the labor rooms and operation room	Vaccinated	21	42
	Not vaccinated	29	58

Table 1 shows that the nurses with the largest age range (20-25 years and up) made up 48 percent of the total, (50%) of study sample were diploma degree graduated and highest percentage (44 %) of participants having experience in maternity hospitals between (6–10) years, and (26%) (11-15 years). More of participants (54%) work in operation room, with the lowest number (46%) working in labor room. When asked about their prior jobs, 40% of the survey participants said they worked in an emergency room, whereas just 12% said they worked in a surgical ward. All research participants said they learned of infection control via a physician (44%) followed by a friend (24%), relatives (20%), and nurses (20%) (12

percent) and (42%) of nurse mid wives were vaccinated against one acquired infection (HBV) while (58%) not vaccinated

Table (2): Nurse-midwives' knowledge about Infection control				
Knowledge level	**Degree of expertise**			
Understanding of the methods used to spread infections	Correct		In correct	
	F	%	F	%
Air	22	44	28	56
Blood	29	58	21	42
Direct	37	74	13	26
Knowing the several sorts of hand washing				
Routine	30	60	20	40
Surgical	26	52	24	48
Understanding of when to wash your hands				
once they got at work	28	56	22	44
prior to the patient examination	19	38	31	62
following a patient examination	21	42	29	58
put on the gloves before	35	70	15	30
put on the gloves after	27	54	23	46
after you discovered contamination	25	50	25	50
Understanding of different glove kinds				
investigative gloves	28	56	22	44
sterile gloves	33	66	17	34
thick gloves	37	74	13	26
Equipment for knowledge protection				
Gloves	36	72	14	28
Mask	42	84	8	16
Glasses	21	42	29	58
Head covering	37	74	13	26
Shoes that are safe	44	88	6	12
Understanding of infection prevention techniques				
Steps in disinfection	21	42	29	58
Equipment cleaning	45	90	5	10
arid heat	39	78	11	22
Autoclave	29	58	21	42
Sterilization via Chemical	33	66	17	34
preparing the patient	39	78	11	22
a secure injection	24	48	26	52
handling of waste	28	56	22	44
Understanding about sterilizing methods.				
Via heat	45	90	5	10
In an autoclave (moist)	42	84	8	16
Through a chemical.	21	42	29	58

Table (2): Nurse-midwives' practices about Infection control				
Nurse-midwives' practices	**Degree of expertise**			
methods for hand washing in birthing rooms to prevent infection	Done		Don't done	
	F	%	F	%
After returning from home, washes hands	41	82	9	18
Before and after examining the patient, wash your hands.	37	74	13	26
Before and after donning the gloves, wash your hands	49	98	1	2
Prior to any operation, wash your hands.	46	92	4	8
Procedures pertaining to the whole sterilizing process in delivery rooms				
Cleaning procedure	30	60	20	40
Instrument cleaning procedure	42	84	8	16
Technique for sterilizing instruments	33	66	17	34
Technique for preparing patients	29	58	21	42
Safe injection technique	28	56	22	44
Handling of sharp instruments	23	46	27	54
Utilizes proper waste management	31	62	19	38
Etiquette on what nurses and midwives dress				
gloves	48	96	2	4
Masks	45	90	5	10
Goggles	38	76	12	24
disposable apron	33	66	17	34
foot covering	31	62	19	38
Cap	25	50	25	50
Procedures for environmental cleanup in operating rooms.				
working with soiled linen	28	56	22	44
Reused PPE	38	76	12	24
Apply chlorine on a bloodstain.	41	82	9	18

4. Discussion

Between 19 January 2022 and 30 April 2022, this study was conducted in the Bint Al-Huda Hospital. In the government hospital, it encompassed fifteen operating rooms. In three US states, a comparable research was carried out. To evaluate the habits and knowledge without intervention, more investigations were carried out in Sudan (2010) and India (2009). (Rutala, 2018)

There were 50 nurse midwives in all who took part (n=). The majority of participants were in the greatest age group (20–25 years and higher), which made up 48% of the total; 50% of the research sample had earned a diploma; the highest percentage (44%) of participants had worked in maternity facilities for 6–10 years; and (26%) were female (11-15 years). The majority of participants (54%) work in the operating room, while the least amount (46%) do so in the labor room. When questioned about their previous employment, 40% of poll respondents claimed they had worked in an emergency department, whereas just 16% had done so in a surgical ward. All study participants reported learning about infection management from a doctor (44%) followed by a friend (24%) and nurses (20%). Twelve percent of nurse midwives had received vaccinations against one acquired illness (HBV), whereas forty-two percent had not. In 2014, a different research was conducted at the Sudan's Khartoum state to evaluate the expertise and procedures in government hospitals' operating rooms for the obstetric department. The findings revealed that the majority of the healthcare professionals there are over 40 years old. The majority of them (68%) did not get any in-service or refresher training in infection control. (Damiels, 2019)

The survey revealed that most nurses had a high degree of knowledge regarding infection prevention and control, the causes and transmission of infections, and surgical hand washing. Less than two thirds of nurses were able to identify sources of infection and the hands of healthcare professionals. bulk of them defined PPE choices. evaluation of high risk, majority of them aware about cleaning, disinfection, and sterilization, majority define waste management, clinical waste define, and more than half excellent performance regarding hand washing. all-around excellent performance with non-infectious garbage (Maurer et al., 2017)

The final results demonstrate the study group's overall knowledge and more than half of its successful performance. According to the survey, fewer than one-third of participants had a thorough understanding of the spread of illness, removing infection sources, hand decontamination techniques, and infection control responsibilities, Additionally, fewer than one third of the performance in donning and donning off the gown, less than one third in performing hand washing, less than half in completing the use of sterile gloves, and less than half in completing the management of sharp waste are satisfied. (George et al., 2015)

The survey also showed that fewer than one third of people had a good understanding of definitions for infection prevention and control, causes and transmission of illness, elimination of infection sources, selection of personal protective equipment, and determining high-risk situations, Less than one third of people have a poor understanding of what cleaning, disinfection, and sterilization are, as well as how to manage waste and identify clinical waste. Along with more than half doing poorly while donning and taking off gowns, fewer than one third performing poorly when washing hands and donning sterile gloves. (Okonofua, et al., 2015)

5. Conclusion

Most of them have high performance and awareness of non-infectious waste management and hand washing. Less than one third of respondents demonstrate knowledge of eradicating sources of infection and responsibility for infection prevention and control. Less than one third also demonstrate performance when it comes to donning and donning gowns. Less than half of respondents demonstrate satisfactory performance when it comes to hand washing and wearing sterile gloves. Less than half, however, demonstrate inadequate performance when it comes to managing sharp waste. More than half of respondents demonstrate inadequate performance when it comes to donning and donning gowns.

6. Recommendation

Educating and certifying nurse midwives will help them gain more practical experience and advance their understanding of midwifery nursing, the effectiveness of nurse midwives in labor rooms can be improved with training programs focused on infection control precautions, for labor rooms, there should be a sufficient number of nurse midwives working, For nurses and midwives who exercise infection control precautions, hospital management should set up ongoing training programs and Structures and guidelines should be set down, for example, on posters in labor rooms and for moms in the birthing rooms, a health education program.

References

Annual report of Maternal death review committee 2016.

JohnP.Burke. MD __ Infection Control – A problem for patient safety –The New ENGLAND JOURNAL MEDICINE -215.NMS infection control pdf –Adobe Redder

Stone PW, Braccia D, Larson E. Systematic Review of Economic Analyses Of Health Care-Associated Infections. American Journal of Infection Control, v 33: p501–509) 2015.

Goodman ER, Platt R, Bass R, Onderdonk AB, YokoeDS,Huang SS. Impact of an environmental cleaning intervention on the presence of methicillin-

resistant StaphylococcusinStaphylococcusin intensive care unit rooms. Infection Control Hospital Epidemiological; 29:593e599.2016

Dann TC. Routine skin preparation before injection: an unnecessary procedure. Practitioner. 2016 Apr;196(174):546–550

Melissa K. Schaefer, MichaelJhung, Preliminary Communication Infection Control Assessment of Ambulatory Surgical Centers (journal of American medical association) JAMA. 2013;303(22): 2273-2279.doi:10.1001/744, jama.2013.

Rutala WA. APIC guidelines for selection and use of disinfectants. American Journal Infection Control,v 24(4): p313–342.11996

Damiels, R. Nursing fundamentals, caring and clinical decision making. lst ed., Austraia: Dalmer Learning. (2019)

Maurer, F. A., Smith, and C.M: Community public health nursing practice: health for Families and population. 3rd ed. (2017).

George Bakris, Merck Manual, Overview of hypertension, professional edition, edited by Robert Porter et al., published online at merckmanuals.com accessed 22 June 2015.

Okonofua Friday Okpokunu Edoja Aigbogun Osasu Nwandu Chinenye Mokenye Cyril Kanguru Lovney , Assessment of infection control practices in maternity units in Southern Nigeria , International Journal for Quality in Health Care, Volume 24, Issue 6, 1 December 2012, Pages 634–640.