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AWARENESS ABOUT NOSOCOMIAL INFECTIONS AMONGNURSES IN OMDURMAN TEACHING HOSPITAL OCTOBER 2017

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ABSTRACT

Physicians, nurses and health care workers are exposed to hospitals for long duration which increases their risk of acquiring infections. Infection control practices are geared towards reduction of occurrence and transmission of infectious diseases. Hundreds of millions of patients are affected b y Hospital- acquired infection(HAI). Nurses have a critical role to play in prevention measures and infection control and they should have the opportunity for continuous professional development. this descriptive study done to assess knowledge, attitudes and practice of nurses regard HAI,82 nurses enrolled in the study sample selected randomly. structured questionnaire was given to each respondent. Data was collected over a period of three months from july to october 2017.As results shows that There was excellent results of knowledge regard HAI mean score is 91.5%,excellent results of attitudes mean64.6% and 91.5% regard practice.there is significant relation between knowledge ,attitudes and practice with demographic data. Thus it was concluded that the knowledge,attitudes and practice about nosocomial infection was excellent but need further educational training to keep updating their knowledge.

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INTRODUCTION

Hospital Acquired infection is infection acquired when someone admitted for any reason to hospital at least 48-72 hours after hospitalization, which can be localized or systemic (Duveau *et al.,* 2005). The most common types of nosocomial infections affect the urinary tract surgical wounds, respiratory system and blood stream (WHO, 2002). Nosocomial infections also may be endemic or epidemic. Endemic infections are most common. Epidemic infections occur during outbreaks, defined as an unusual increase above the baseline of a specific infection or infecting organism (WHO, 2002). Nosocomial infection can be transmitted from patient to patient by way of health care workers who do not use personal protective equipments (PPE) (*Horn et al.,* 1988). Nosocomial infections can occur at any time and with all age group globally (Aly *et al.,* 2005) in immuno-compromised adults and the elderly (De-Oliveira *et al.,* 2005). (HAI) health acquired infection or nosocomial infection acquired in healthcare settings are the most frequent adverse events in health care delivery Worldwide (WHO, 2003). Also includes occupational infections among healthcare staff. More than hundreds of millions of patients are affected by HAI worldwide each year, leading to significant patient mortality rates and financial losses for health systems (Burke, 2003). The burdens of Nls include prolonged duration of hospitalization for patients resulting in increased costs of healthcare and morbidity and deaths (Coffin and Zaoutis, 2008). Therefore knowledge about the frequency and distribution of HAIs is important to improve infection control measures as well as to develop effective preventive and curative strategies Which will help in decreasing incidence, morbidity and mortality (Park, 2008). Education and training of healthcare workers about standard infection control can reduce the extent of risks of nosocomial infection this produce safe working practices and protect staff and patients from infections (Black and Jacobs, 1997). Nurses have a critical role to play in prevention measures and infection control and they should have the opportunity for continuous professional development therefore it is manditery for the nurses to t know these Standard precautions which may prevent high a percentage of these risks (Jayasinghe and Weerakoon, 2004). Hese standard precaution include, hand hygine, personal protective device

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whenever is anexpectated of possible exposure to infectious material,proper handling and proper clean and disinfectant patient care equipment,follow safe injection and practice, follow respiratory hygiene/cough etiquette principles (Centers for Disease Control, 1988). Practice of hand hygiene regularly before and after any procedure of from patient to patient regullary and under supervision and availability of solution this minimize the spread of infection between nurses and also decrease of spread of infection from patients (WHO, 2006). Healthcare associated infections (HAIs) are preventable through implementation of best infection prevention and control practices. This will facilitate the delivery of high quality health care for patients and a safe working environment for healthcare workers (Cronenwett *et al.,* 2007).

Aim of the study

- To assess knowledge, attitude and practice of nurses regard management of hospital acquired infections in Omdurman teaching hospital -Sudan.
- To compare the relationship between knowledge, attitudes and practice of nurses regards spread of nosocomial infections in Omdurman teaching hospital -Sudan.
- To measure the relationship between knowledge attitudes and practice with demographic data in Omdurman teaching hospital -Sudan.

MATERIALS AND METHODS

This cross-sectional study was designed as a descriptive study to evaluate knowledge , attitudes and practice of 82 nurses who are working in Omdurman teaching hospital in different area. The nurses who participate in the study were selected randomly, questionnaire were design that involved knowledge attitudes and practice and some demographic data which include age, gender, education level, work area and work experience. Second part of questionnaire were formulated including the knowledge regard hand hygiene ,spreading of pathogens through nurses and contaminated medical equipements (7 questions), attitude 6 questions and practice of nurses regarding prevention of nosocomial infection 10 question, the questionnaire items derived from established guidelines set by atask force committee on Infection Control Practices Advisory Committee and the HICPAC/SHENAPIC/IDSA theme who infection control guide line (Boyce and Pittet, 2002). Approval informed consent was taken from each of the participant before participating in the study and respect those who refused to participate in the study. Inclusion criteria for respondents, both sex nurses, who accept to participate in the study Exclusion criteria those who refuse to participate in the study Setting in Omdurman teaching hospital from July to October 2017.

Data collection

The survey interview questionnaires consist of demographic characteristics of nurses knowledge tested with7 questions that cover hand washing ,wearing and removing gloves and washing hands after removal of gloves and source of spread of infection, security measures for nurses ,isolation of infected patients. The attitude cove 7 question, and practice tested by 7 questions related to using antiseptic before and after each patient contact and contaminated equipment, HH after the contact with body fluids of the patient, direct contac with the healthy or contaminated skin of the patient, after placing the urinary catheter answer.

Table 1. Distribution of demographic data no 82

variable	frequancy	Percent(%)
Age		
20-30	39	47.6
31-40	21	25.6
41-50	22	26.8
Gender		
Male	15	18.3
Female	67	81.7
Education		
High School	18	22.0
diploma	46	56.1
Bachelor	15	18.3
Master	3	3.7
Work area		
Intensive care unit	25	30.5
Medical ward	31	37.8
Surgical ward	19	23.2
Out patients	7	8.5
work experience		
1-5 years	38	46.3
Years more than five years	44	53.7

Table 2. Nurses knowledge about the prevention of spreading of HAIs no 82

Knowledge	Frequancy	%
Doing hand hygiene HH		
Completely disagree	0	0
Disagree	0	0
Neutral	0	0
Agree	32	39.0
Completely agree	50	61.0
The supervision during HH performance		
Completely disagree	3	3.7
Disagree	3	3.7
Neutral	9	11.0
Agree	32	39.0
Completely agree	35	42.7
Spread of pathogens through HCWs		
Completely disagree	2	2.4
Disagree	12	14.6
Neutral	18	22.0
Agree	25	30.5
Completely agree	25	30.5
Completely disagree	0	0
spread of HAIs through medical equipment		
Completely disagree	2	2.4
Disagree	3	3.7
Neutral	11	13.4
Agree	29	35.4
Completely agree	37	45.1
Security measures for HCWs		
Completely disagree	1	1.2
Disagree	0	0
Neutral	0	0
Agree	23	28.0
Completely agree	58	70.7
Isolation of patients with infectious Diseases		
Completely disagree	1	1.2
Disagree	2	2.4
Neutral	8	9.8
Agree	21	25.6
Completely agree	50	61.0
HH after removal of sterile and non-sterile gloves		
Completely disagree	0	0
Disagree	0	0
Neutral	4	4.9
Agree	33	40.2
Completely Agree	45	54.9
Mean knowledge score		
moderate	7	8.5
excellent	75	91.5
poor	0	0

Nurses instructed to choose one of the five possible responses for each statement. Scoring system: scoring was as;

1=completely Disagree, 2= Disagree, 3 =Neutral, 4 =Agree,5= completely agree the score divided to excellent moderate and poor for knowledge, attitudes and practice statistical SPSS software package (Stand for statistical product and service solutions version 20) was used for data analysis. Descriptive statistics including frequency, distribution, mean, and standard deviation were used to describe different characteristics. Chi-Square test was used to test the significance of results. Pearson correlation was conducted to show correlations between knowledge, attitude and practice scores among the nurses. p-value of less than 0.05 was considered as denoting statistical significance.

RESULTS AND DISCUSSION

82 nurses enrolled in the study half of them their age between 20-30,and half of them their age in range between 31 and above 40years, 81.7 are female and rest of percent are male as shown in table (1) the other demographic data shown in table (1). In Table (2) which shown the frequency of knowledge of respondent regard Doing hand hygiene HH, The supervision during HH performance, Spread of pathogens through HCWs and medical equipment and taking security measures for health care workers and doing HH when removing gloves and isolation of infectious patients, their mean score are 91.5% considered as excellent while 8.5% considered as moderate ,no poor score.

Table 3. Nurses' attitudes as regards the prevention of spreading of HAIs no 82

Attitudes	Frequancy	%
Increase of the hospitalization days, mortality and costs		
Completely disagree	0	
Disagree	2	2.4
Neutral	0	0
Agree	48	58.5
Completely agree	32	39.0
The nurse can spread infections		
Completely disagree	7	8.5
Disagree	8	9.8
Neutral	15	18.3
Agree	24	29.3
Completely agree	28	34.1
The training of new employees		
Completely disagree	1	1.2
Disagree	1	1.2
Neutral	1	1.2
Agree	37	45.1
Completely agree	42	51.2
Unrealistic expectations that nurses clean their hands after any contact		
Completely disagree	21	25.6
Disagree	8	9.8
Neutral	4	4.9
Agree	25	30.5
Completely agree	24	29.3
The punishment for non adherence to protocols		
Completely disagree	4	4.9
Disagree	3	3.7
Neutral	11	13.4
Agree	40	48.8
Completely agree	24	29.3
Negative reaction when a colleague doesn't act as recommended		
Completely disagree	13	15.9
Disagree	5	6.1
Neutral	9	11.0
Agree	34	41.5
Completely Agree	21	25.6
Mean attitudes score		
moderate	29	35.4
excellent	53	64.6
poor	0	0

In Table (3) show Nurses' attitudes as regards HAIs when asked them about the long stay in hospital will increase the mortality and cost and The training of new employees and if it is Unrealistic expectations that nurses clean their hands after any contact, the mean score of excellent attitudes is 64.6% while moderate attitudes is 35.4%, no poor score attitudes

Table 4. Nurses' practices toward the prevention of spreading of HAIs no 82

Practice	Frequency	%
The use of antiseptics before and after each patient contact		
Completely disagree	1	1.2
Disagree	1	1.2
Neutral	2	2.4
Agree	40	48.8
Completely Agree	38	46.3
The use of antiseptics before the equipment preparation for vascular us		
Completely disagree	0	0
Disagree	0	0
Neutral	1	1.2
Agree	42	51.2
Completely Agree	39	47.6
The use of antiseptics during the contact from a patient to another patient		
Completely disagree	0	0
Disagree	0	0
Neutral	5	6.1
Agree	38	46.3
Completely Agree	39	47.6
HH before and after any procedure		
Completely disagree	0	
Disagree	0	
Neutral	1	1.2
Agree	26	31.7
Completely Agree	55	67.1
HH after the use of any contaminated equipment		
Completely disagree	0	0
Disagree	0	0
Neutral	2	2.4
Agree	34	41.5
Completely Agree	46	56.1
HH after the contact with body fluids of the patient		
Completely disagree	0	0
Disagree	0	0
Neutral	2	2.4
Agree	19	23.2
Completely Agree	61	74.4
HH after direct contact with the healthy skin of the patient		
Completely disagree	0	0
Disagree	1	1.2
Neutral	5	6.1
Agree	40	48.8
Completely Agree	36	43.9
HH after placing the urinary catheter		
Completely disagree	0	0
Disagree	0	0
Neutral	0	0
Agree	23	28.0
Completely Agree	59	72.0
HH after the contact with the contaminated skin and before the contact with the healthy skin		
Completely disagree	0	0
Disagree	1	1.2
Neutral	0	0
Agree	27	32.9
Completely Agree	54	65.9
HH after touching objects surfaces in the patient's environment		
Disagree	0	0
Completely disagree	1	1.2
Neutral	2	2.4
Agree	41	50.0
Completely agree	38	46.3
Mean practice score		
Moderate	7	8.5
Excellent	75	91.5
Poor	0	0

Table (4) explain the practice of nurses regard prevention of nosocomial infection and the mean score is 91.5% which reflect excellent practice while 8.5% is moderate practice also no poor practice score. The results of the analysis of the computed Means and Standard Deviations for the separate groups suggest that there were significant relations in Knowledge an Practices between HAIs and nurses.

Table 5. Relation between knowledge attitudes and practice among nurses regard HAIs

Variable	Mean	SD
Knowledge	30.2317	3.13207
Attitudes	23.2561	3.57568
Practice	45.2805	3.10823

Table 6. Relationship between knowledge attitudes and practice with demographic data (cross tabulation)

	Excellent	Moderate	Poor	P value
Knowledge				
Age	91.5%	8.5%	0	.732
Gender	91.5%	8.5%	0	.000
Education	91.5%	8.5%	0	.361
Work area	91.5%	8.5%	0	.019
Work experience	91.5%	8.5%	0	.549
Attitude				
Age	64.6%	35.4%	0	.430
Gender	64.6%	35.4%	0	.436
Education	64.6%	35.4%	0	.394
Work area	64.6%	35.4%	0	.957
Work experience	64.6%	35.4%	0	.111
Practice				
Age	91.5%	8.5%	0	.417
Gender	91.5%	8.5%	0	.774
Education	91.5%	8.5%	0	.436
Work area	91.5%	8.5%	0	.776
Work experience	91.5%	8.5%	0	.241

But weak associations were found between Knowledge, Practices and Attitudes of nurses which shown in Table (5) mean+sd is, 30.2317, 3.13207 respectively for knowledge and regard practice mean + sd 23.2561, 3.57568 respectively while mean+SD for practice is 45.2805, 3.10823 Table (6) show the relation of knowledge attitudes and practice with demographic variable Relation between knowledge with age ,gender, education , work area and work experience is significant *Ps* are 732, .000, .361, .019, .549 respectively, relation between attitude and age ,gender, education , work area and work experience is significant *Ps* are .430, .436, .394, .957 Nurses in this study 82 participated in this study, the majority their age between 20-30years and 81.7 are female, their education range from higher, diploma bacloria and master degree but 56.1% with diploma.

DISCUSSION

Several studies found burdens placed on cost of healthcare services, losing of human live and increasing cost for families (Zhan and Miller, 2003). Many studies have shown that healthcare workers can spread nosocomial Infections easly (Lepelletier *et al.,* 2005) and more studies found that health care workers are the main source of spread of pathogens and can be the source in the transmission of nosocomial infections (de-Oliveira *et al.,* 2005) and 30.5% agreed that. Also they agree HH after removal of sterile and non-sterile gloves which represent 54.9 % similary to study done India in which found that In prevention of germs transmission to patients respondents48.8% (nearly half of respondent)suggested that hands should be washed before and after every procedure75.49% (Amit Mohan Varshney *et al.,* 2014).Only 49% of respondents agreed that it is Unrealistic expectations that nurses clean their hands after any contact. Respondents agree that healthcare facilities make Security measures for HCWs for reducing the spread of nosocomial infections a similar study conducted by Monarca *et al.* (2000). Revealed that lack of sterile equipment in dental offices contributed to the spread of nosocomial infections. Another study by Ribby and colleagues showed that utilization of posters and videos for nursing staff education, over two year period, contributed to higher compliance with recommended guidelines for reducing the spread of infections (Ribby, 2005). While 47.6% use of antiseptics during the contact from a patient to another patient. In our study, 74.4% of the respondents completely agreed with the use of gloves when there is a risk of contact with blood or body fluids this is similar to study done in india and their results regard using glove when contact with body fluid is 61.76% (Amit Mohan Varshney *et al.,* 2014). There is significant relation between knowledge and practice regard prevention of nasocomial infection which is supported by study done by Amit Mohan in India (Amit Mohan Varshney *et al.,* 2014). Regard relation between demographic data and knowledge attitudes and practice there is significant relation between knowledge, attitudes and practice and demographic data p 0.05.

Conclusion

Nurses knowledge regard hais is excellent also their practice. There is significant relation between knowledge attitudes and practice and demographic data. Recommen dations Periodic refreshing course about prevention of infection and continuous supervision for compliance of hand hygiene to keep up dated.

REFERENCES

Aly, H., Herson, V., Duncan, A, Herr, J., Bender, J., Patel, K. and EI-Mohandes, AA.E. 2005. Is bloodstream infection preventable among premature infants? Atale of two cities *Pediatrics,* 115(6),1513 -518.

Amit Mohan Varshney *et al.* 2014. Awareness About Nosocomial Infections Among Nurses And Healthcare Workers Of Hospital In Meerut Up. *Asian Pacific Journal of Nursing,* 1(2):46-51.

Black, JM. and Jacobs, EM. 1977. Medical Surgical Nursing - Clinical Management for Continuity of Care. Philadelphia: Saunders).

Boyce, M. J. and Pittet, D. 2002. Guidelines for hand-hygiene in health-care settings Recommendations of the healthcare infection control practices advisory committee and the HICPAC/SHEAlAPCIIDSA hand hygiene taskforce. *Infection Control and Hospital Epidemiology*, (23) Suppl. S3-S16.

Burke JP, 2003. Infection control-a problem of patient safety N Engl J Med. Feb 13;348(7):651-6

Centers for Disease Control, 1988. Update, Universal Precautions for prevention of transmission of human

Coffin, S. and Zaoutis, T. 2008. Health care Associated Infections, Principles and Practice of Pediatric Infectious Diseases, 3rd edition. *Churchill Living stone*, 101.

Cronenwett, L., Sherwood, G., Barnsteiner, J., Disch, J., Johnson, J., Mitchell, P. *et al*. 2007. *Nursing Outlook*, 55, 122 - 131

De-Oliveira, AM., White, K.L., Leschinsky, D.P., Beecham, B.D., Vogt, T.M., Moolenaar, R. L Perz, J.F., and Safranek, T. J. 2005. An outbreak of Hepatitis CVirus infections among patients at ahematology/oncology clinic. *Annals of Internal Medicine,* 142 (11),898 -902.)

de-Oliveira, AM., White, K.L., Leschinsky, D.P., Beecham, B.D., Vogt, T.M., Moolenaar, R. L Perz, J.F., and Safranek, T. J. 2005. An outbreak of Hepatitis CVirus infections among patients at ahematology/oncology clinic. *Annals of Internal Medicine,* 142 (11),898 -902

Horn, WA., Larson, EL., McGinley, KJ. and Lyden, JJ. 1988. Micobial flora of the hands of health care personnel: Differences in composition and hand antibacrial resistance. *Infect control Hosp Epidemiol.,* 9:189-3.

immunodeficiency virus, hepatitis B virus, and other blood borne pathogens in health -care settings. MMWR, 37, 377-388.

Jayasinghe, RD. and Weerakoon, BS. 2014. Prevention of nosocomial infections and standard precautions: knowledge and practice among radiographers in Sri Lanka. *J Med Allied Sci.,* 4(1): 09-16)

Lepelletier, D., Perron, S., Bizouarn, P., Caillon, J., Drugeon, H., Michaud, JL. and Duveau, D. 2005.Surgical Site Infection after Cardiac Surgery: Incidence, Microbiology and Risk Factors. *Infection Control and Epidemiology,* 25(5): 466-72. doi: 10.1086/502569

Lepelletier, D., Perron, S., Bizouarn, P., Caillon, J., Drugeon, H" Michaud, J.L., and Duveau. 2005. Surgical Site Infection after Cardiac Surgery: Incidence, Microbiology and Risk Factors. *Infection Control and Epidemiology*, 25(5), 466 -472

Monarca, S., Grottolo, M., Renzi, D., Paganelli, C., Sapelli, P., Zerbini, I., and Nardi, G. 2000. Evaluation of environmental bacterial contamination and procedures to control cross infection in asample of Italian dental surgeries. *Occupational and Environmental Medicine*, 57, 721-726.

Park, K. 2008. Park's Textbook of Preventive and Social Medicine, 20th Edition, 313.

Ribby, K. 2005. Decreasing urinary tract infections through staff development, outcomes, and nursing process. *Journal of Nursing Care Quality,* 21(3), 272 -276.

WHO, 2006 epidemic and pandemic alert and response. infection control standard precautions in health care.

WHO. 2003. Prevention of hospital-acquired infections, a practical guide. Geneva, World Health Organization, 2002

World Health Organization (WHO), 2002. Prevention of Hospital Acquired Infections: A Practical Guide, 2nd Edition. WHO/CDSICSRlEPHI2002.12.

Zhan C, and Miller, M.R. 2003. Excess length of stay, charges, and mortality attributable to medical injuries during hospitalization. *JAMA,* 290(14), 1868 -1874..

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