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A STUDY OF KNOWLEDGE, ATTITUDE AND PRACTICE ABOUT HOSPITAL ACQUIRED INFECTION AMONG NURSES OF GAUHATI MEDICAL COLLEGE & HOSPITAL, GUWAHATI, ASSAM

Community Medicine

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ABSTRACT

Background: Hospital-acquired infection (HAI) is cross infection of one patient by another or by doctors, nurses and by other hospital staff, while in hospital.

Objectives: To study knowledge, attitude and practice about HAI among nurses of Gauhati Medical College & Hospital.

Materials and Methods: A Cross Sectional Study was carried out during April to June 2017 using pretested, predesigned pro forma covering 150 nurses of Gauhati Medical College & Hospital.

Results: Majority (37.33%) of the nurses were of age group 31-40 years. Majority 78(52%) have work experience of 1-5 years. About 82.7% knew about HAI .There is significant relation between knowledge of HAI and work experience of the nurses.

Conclusion: As the results indicate a low level of awareness among the nurses about HAI, it is suggested to provide training sessions on the prevention and control of HAI to nurses.

KEYWORDS

knowledge, attitude, practice, hospital acquired infection.

Introduction:

Hospital acquireds infections or Nosocomial infections affect a considerable number of patients all over the world and are among the major risks and causes of death in hospitals of the world. According to the WHO, 7.1 million cases of HAI occur every year. One out of every 20 people suffers from hospital infection. This leads to 99,000 cases of death every year[1].WHO has provided a general definition of HAI and has renamed it as healthcare-associated infection. The healthcare-associated infections (HAIs) were defined by the CDC as a localized or systemic condition resulted from an adverse reaction to the presence of an infectious agent(s) or its toxin(s) (6) that occurs during a hospital admission 48 hours or more after hospital admission or within 30 days after discharge. So the patient must not show symptoms of infection at the time of admission and the infection must not be in the incubation period[2]. Hospitals provide a favorable transmission path-way for the spread of nosocomial infections, owing partly to poor infection control practices among health workers on one hand and overcrowding of patients in most clinical settings on the other. The factors that can minimize the risk of HAI include the systematic treatment of patients, avoiding prolonged hospitalization, the use of antibiotics, hand washing by health care personnel, and the use of sterilization techniques in therapeutic procedures[3] .As members of the health care team, nurses play a very important role in HAI control. The prevention of HAI requires attention to three concepts: knowledge, attitude, and

Practice[4]. Hospital personnel, especially the nurses play an important role in managing and controlling the hospital infections; therefore, nurses must have correct, up-to- date and appropriate scientific information regarding varieties of hospital infections, their effects on patients, recognition of people at risk and also the criteria to prevent and control. This study was conducted to evaluate knowledge, attitude and practice of nurses of GMCH against HAI.

Materials and Methods:

The Cross Sectional Study was carried out from 1st April 2017 to 30 June 2017 amongst 150 nurses of Gauhati Medical College & Hospital.A pre designed pre tested schedule was used. The tools were prepared based on the hospital-acquired infection guidelines provided by WHO and Centre for Disease Control (CDC). The tools were pre-tested before data collection and proper approval was obtained from the appropriate authority prior to the study. The sample population was selected through simple random sampling. Inclusion criteria were having at least a bachelor's degree and a work experience of at least three months. The only exclusion criterion was reluctance to participate in the study. The location of study covered Medicine wards, Paediatrics wards, Gynaecology wards, and Surgical units of Gauhati Medical College and hospital.The study was conducted after obtaining informed consent from nurses. Data were collected via questionnaires and analyzed in MS Excel and SPSS.p value<0.05 is taken as significant association.

RESULTS:

Fig 1. shows that out of 150 nurses, maximum i.e 56(37.33%) belonged to age group 31-40 years and minimum i.e 28(18.67%) in age group 51-60years.

Table1. Shows distribution of respondents based on work experience.

Majority 78(52%) have work experience of 1-5years while only 22(14.66%) have work experience of less than 1 year.

Table2. Shows Knowledge about HAI. Of 150 nurses 124(82.7%) knew what is HAI and 26(17.3%) didn't knew what is HAI. Majority i.e 132(88%) knew about hand washing before and after patient contact and (115(76.6%) agreed that hand washing can prevent HAI. Majority i.e 110(73.3%) knew about wearing Personal protective equipment during invasive procedures and 128(85.3%) knew about waste management following Biomedical waste mangement rules . On being asked whether proper waste disposal following BMW rules can prevent HAI 107(71.3%) respondents agreed while 95(63.3%) knew whom to report if there is occupational exposure injury. Only 65(43,3%) had knowledge about standard precautions for preventing HAI. When asked whether contaminated needle stick exposure can cause infection like HepatitisB,HepatitisC ,HIV 98(65.3%) agreed.

Fig1. Bar diagram showing age distribution

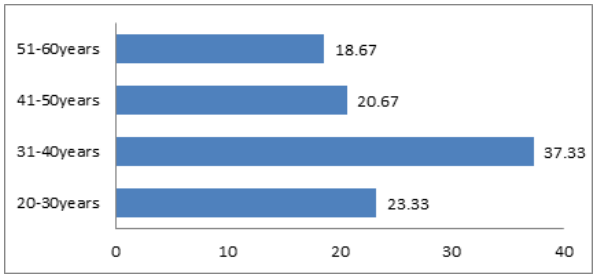

Table1. Distribution of respondents based on work experience

Years of work experience	Number(Percentage)
< 1 year	22(14.66)
1-5 year	78(52)
>5 year	50(33.33)

Table 2. Knowledge about hospital acquired infection

Assessing knowledge about HAI	Yes(%)	No(%)
Do you know what is HAI	124(82.7)	26(17.3)
Knowledge about hand washing before and after patient contact	132(88)	18(12)
Can hand washing prevent HAI	115(76.6)	35(23.4)
Knowledge about wearing PPE(gloves, gowns, aprons) during invasive procedures	110(73.3)	40(26.7)
Knowledge about waste management following BMW rules	128(85.3)	22(14.7)
Can proper waste disposal following BMW rules prevent HAI	107(71.3)	43(28.7)
Know whom to report if there is occupational exposure injury	95(63.3)	55(36.7)
Knowledge about standard precautions for prevention of HAI	65(43.3)	85(56.7)
Do you know that contaminated needle stick exposure can cause infection like HepB,HepC,HIV	98(65.3)	52(34.7)

Table3. Shows Attitude about Hospital acquired infection. Majority i.e 68(45.3%) are not much concerned about HAI, 47(31.3%) are much concerned whereas 10(6.7%) are not concerned about HAI and 5(3.3%) are not sure about it. Majority i.e 85(56.7%) think that nurses are more at risk of HAI whereas 22(14.7%) think doctors are more at risk of HAI. If there is HAI 96(64%) nurses will sometimes inform the higher authorities whereas only

49(32.7%) will always inform higher authorities and 5(3.3%) said they will not inform.

Table4. Shows Practice on HAI. Of 132 nurses who had knowledge of hand washing 115(87.1%) practice hand washing before and after patient contact. Of 110 nurses who had knowledge of PPE(apron,gloves,mask) majority i.e 94(85.4%) wear PPE during invasive procedure. Of 128 respondents who had knowledge of BMW rules 110(85.9%) actually followed the Biomedical Waste Management rules. Of 95 nurses who had knowledge of occupational exposure injury only 35(36.8%) said they report all kinds of occupational exposure injury.

Table 3. Attitude about HAI

		Number (Percentage)
Concerned about HAI	Very much	20(13.3)
	Much	47(31.3)
	Not much	68(45.3)
	Not concerned	10(6.7)
	Not sure	5(3.3)
Who is more at risk of HAI	Doctor	22(14.7)
	Nurse	85(56.7)
	Patient	43(28.7)
Whether inform higher authorities if there is HAI	Always	49(32.7)
	Sometimes	96(64)
	Never	5(3.3)

Table 4. Practice on HAI

	Yes(%)	No(%)
Hand washing before and after patient contact(n=132)	115(87.1)	17(12.9)
Wear gloves,mask, apron(PPE) during invasive procedure(n=110)	94(85.4)	16(14.6)
Properly dispose waste according to BMW rules(n=128)	110(85.9)	18(14.1)
Report all kinds of occupational exposure injury(n=95)	35(36.8)	60(63.2)

Table5. Shows cross table between knowledge with age and work experience. There is significant association($p<0.05$) between knowledge of HAI with work experience of the nurses but no significant relation of knowledge of HAI with age.

Table 5. Cross table between knowledge of HAI with age and work experience

	Knowledge		P value(Chi square for trend)
Age	Present	Absent	0.14(2.146)
20-30	25	10	
31-40	49	7	
41-50	25	6	
51-60	25	3	
Work experience			0.0001*(37.15)
<1 year	6	16	
1-5 year	70	8	
>5years	48	2	

DISCUSSION:

Hospital-acquired infection (HAI) is cross infection of one patient by another or by doctors, nurses and by other hospital staff, while in hospital. HAI is one of the common problems faced by hospitals in all countries around the world. Nosocomial infections, also called "hospital-acquired infections", are infections acquired during hospital care which are not present or incubating at admission but occur more than 48 hours after admission. Nurses are part of the healthcare team that plays a unique role in the control of hospital infection. In my study majority (37.33%) of the nurses were of age group 31-40 years. About 82.7% knew about HAI and 85.3% knew about Biomedical waste management rules. About 110(73.3%) nurses knew about Personal protective equipment. 87.1% practiced hand washing and 85.4% wear PPE during invasive procedures. About 47(31.3%) nurses were much concerned about HAI whereas 68(45.3%) were not much concerned about HAI. About 85(56.7%) believed that nurses were at more risk of HAI. Majority 115(87.1%) practiced hand washing before and after patient contact and 94(85.4%) wear PPE during invasive procedures. About 110(85.9%) followed BMW rules. There is significant relation between knowledge of HAI and work experience of the nurses but no significant relation with age.

The results of a study conducted by Darawad et al. on nursing students in Yemen showed that most nursing students have low levels of knowledge, a positive attitude, and a moderate practice about infection control (Darawad & Al-Hussami, 2013).

Ghanbari et al. conducted a study on 130 nurses. The results showed that most nurses do not have sufficient knowledge and practice about the prevention of hospital infection (Ghanbari et al., 2013).

Result obtained from study done by (Ghadamgahi, et al., 2011; and Taneja, et al.,2009) indicated that majority of the nurses (67.9% and 68.3% respectively) have poor knowledge toward nosocomial infection.

In a study conducted by Yang Luo et al. in China on 1,444 nurses, in which they assessed the knowledge of nurses about standard precautions as average (Luo et al., 2010).

A study was conducted by Gould et al. on 173 nurses working in three wards (ICU, Medical-surgical wards), in which they assessed the knowledge of nurses about standard precautions as low (Gould & Chamberlain, 1994).

The results of another study by Sodhi et al. showed that more than 90% of ICU nurses had a very good knowledge of infection control (Sodhi et al., 2013).

Chan's study also showed that 56% of nurses had a good knowledge about infection control and 79% of them had a good practice in relation to standard.

CONCLUSION:

The study shows that knowledge of the nurses of GMCH on various aspects related to hospital acquired infection is not adequate.Practice of hand washing, wearing PPE and following Biomedical waste management rules is also not adequate. Health department should do

their best to inform the nurses and all the medical personnel about the prevention of HAIs according to world standards by way of academic courses, posters and conferences. It is also necessary to improve the knowledge of standard precautions, develop programs for HAI control, and hold training courses based on successful educational models to increase the awareness of nurses and hold practical courses for practicing these principles.

LIMITATIONS:

Due to constraints of resource and time the study was limited to nurses of GMCH only.

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CONFLICT OF INTEREST: No conflicts of interest.

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