



Hospital Acquired Infections (HAIs) Prevention Practices Among Medical Students in a Teaching Hospital in Jos, Plateau State, Nigeria

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ABSTRACT

Background: The prevention of healthcare-associated infections is central to the provision of safe, high-quality healthcare. Students are a part of the healthcare team and are at increased risk of these infections. This study seeks to assess Hospital Acquired Infections (HAIs) prevention practices among medical students in a Teaching Hospital in Jos, Plateau State, Nigeria.

Methods: This was a descriptive cross-sectional study done in July 2019 among medical students using a Multistage sampling technique. Data was collected using a self-administered structured questionnaire and analyzed using the IBM SPSS 28 (Statistical Package for the Social Sciences).

Results: Almost all (99.1%) of students claim that they wash their hands before and after seeing patients, 81.9% wash their hands before meals, 57.4% wash their hands before performing invasive bedside procedures, 72.7% wash before and after examining patients, 30.2% wash their hands before & after touching wounds, but not when gloved, 63.9% wash their hands between two different procedures on different patients. Concerning wearing face/nose masks 86.8% said they wore masks when transporting coughing patients out of the ward, 70.3% stated that they wore masks when irrigating septic wounds, 60.7% said they wore face masks whenever they were attending to patients with fecal incontinence, 76.3% said they wore face mask whenever they were delivering a baby of an HIV Positive woman., 51.6% said they wore face mask whenever they were visiting neonatal intensive care unit. The majority of respondents (83.6%) have never sustained a needle stick injury before, main reasons for non-use of PPE include High cost (24.7), PPE Not available (951.1%), difficulty in using (15.1%), No reason (9.1%).

Conclusion: Generally, more than a third 150 (68.5%) of respondents had good practice of HAI prevention, while 69 (31.55) had a poor practice of HAIs prevention. There is also a need to ensure that the availability of PPEs, hand washing and waste disposal equipment is ensured, while medical students are also taught the importance of good equipment hygiene.

Keywords: Hospital Acquired Infections (HAIs), Medical students, Nosocomial Infections, Prevention practices.

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1. INTRODUCTION

Nosocomial infections are a worldwide phenomenon, occurring globally, among 7%–12% of hospitalized patients with over 1,400,000 people suffering from infections acquired in treatment centers and a resultant estimated annual death of 80,000 [1]. Managing

hospital-acquired infections (HAIs) is a major problem faced by hospitals globally [2]. According to the World Health Organization (WHO), 7% and 10% of hospitalized patients in developed and developing countries respectively will acquire at least one HAI during their stay in hospital [3]. The assessment of the practice of medical students towards the prevention of hospital-acquired infections is

of paramount importance because of its implication for disease transmission [3], [4].

The high burden of HAIs globally is mostly because of unsatisfactory compliance with infection prevention and control measures by healthcare workers [4], [5]. Infections acquired in healthcare facilities result in adverse healthcare outcomes such as increased hospital stays, increased morbidity, mortality and increased cost of medical care for patients and hospitals [4], [5].

An audit of surveillance reports on Hospital Acquired Infections (HAIs) in a Nigerian tertiary health facility found that surgical and medical wards had the most infections (48.3%) and (20.5%) respectively. Urinary tract infection (UTI) and surgical site infection (30.7%) were the most prevalent (43.9%) HAIs. UTIs were significantly higher in surgical and medical wards, surgical site infections in obstetrics and gynecology wards, and soft tissue infections and bacteremia in pediatric wards [5].

The prevention of healthcare associated infections is central to the provision of safe, high-quality healthcare [6]. Students are a part of the healthcare team and are at increased risk of these infections. This usually occurs because of their increased contact time with the hospital and its surroundings through their activities such as history taking, attending ward rounds, and going for evening calls at the accident and emergency wards and labour wards [7], [8]. The risk also increases during training sessions on basic procedures such as setting a line, assisting during surgeries, wound dressing. Students are prone to accidents such as needle pricks, getting in contact with infected body fluids and other risky events [7], [8].

It is estimated that one out of every twenty hospitalized patients will contract an HAI. The risk is substantial not only for patients but also for health care workers (HCWs), including medical students [6], [8]. Hence, medical students need to have adequate knowledge and practice about infection prevention and control (IPC) practices, this has been incorporated into the training curriculum [7], [8]. Therefore, a good assessment of the current prevention practice will provide a basis for developing successful infection control programs, and assist policy and decision-makers in the development of HAIs strategic plans and prevention programs [8], [9]. Limited information is available regarding the practices of medical students regarding IPC and the educational approaches used to teach them these practices. However, since students regularly attend in-patient and out-patient clinics and operation theatres, assessment of their practices for HAI is crucial [8], [9].

In a study on prevention and control of healthcare-associated infections within developing countries, it was found that many developing countries often face significant health and hygiene challenges that predispose them to the transmission of infectious diseases in healthcare settings due to deficient infrastructures, rudimentary equipment and poor quality of care [9], [10]. All these contribute towards incidences of nosocomial infections which have been estimated to be between 2–6 times higher than those in developed nations [9], [10]. The high burden of HAIs may also be due to the lack of a standardized infection prevention program, limited resources, poor sanitary conditions and hygiene practices [11].

Risk factors for HAIs among students include Insufficient disinfection of hands, clothing and equipment (e.g., stethoscope, pen torch), inhalation of droplets from infected patients, and contact with infected surfaces. Students who are immunosuppressed due to diseases like diabetes mellitus and prolonged use of corticosteroids are also at higher risk [6], [8], [10], [12]. This study seeks to assess hospital Acquired Infections (HAIs) prevention practices among medical students in a Teaching Hospital in Jos, Plateau State, Nigeria.

2. METHODOLOGY

Jos North Local Government Area (LGA) is one of the seventeen local government areas in Plateau State, and it is mainly metropolitan [13], [14]. It was created in 1987 and extends over an area of over 291 km² with a population of 429,300 projected from the 2006 National Population and Housing Census, with 266,666 (62%) being urban dwellers and 163,134 (38%) being rural dwellers [13]–[15]. The LGA has 20 political wards which include Tafawa Balewa, Lamingo, Tudun Wada, Jenta Adamu, Kabong, and Mazah amongst many others. There are diverse ethnic groups in Jos North LGA. Civil service, farming and small-scale businesses are the predominant occupations. Christianity and Islam are the two most commonly practised religions in the area. Jos North LGA has some healthcare facilities which include 29 primary healthcare centers, one federal and one state hospital and over 40 private and faith-based institutions including Bingham University Teaching Hospital, Our Lady of Apostles Hospital and Faith Alive Foundation [13]–[15].

A descriptive cross-sectional study was the study designed to collect data from undergraduate medical students in the clinical arm of the College of Medicine and Health Sciences of Bingham University, using a structured self-administered questionnaire.

The sample size was determined using the Kish formula for calculating sample size was used to determine the sample size for this study. The P value for the sample size determination was obtained after reviewing data from similar previous studies [16]. These values were used as the prevalence, at a 95% confidence interval and the margin of error was set at 5%. Kish's formula is $n = Z^2pq/d^2$. In computing the values, $n = 195.92$; $n = 196$. Approximately 10% of the minimum sample size was added to 196 to make room for non-response and rounded up, which resulted in a sample size of 216. A multistage sampling technique was employed in the selection of study participants.

Stage one (1)-Selection of institution: There are 3 tertiary institutions in Plateau state. Simple random sampling (balloting) was used to select one Teaching hospital from three (Jos University Teaching Hospital-JUTH, Plateau State Specialist Hospital-PSSH, Bingham University Teaching Hospital-BHUTH).

Stage two (2)-Selection of classes: A stratified random sampling method was used. Each class was regarded as a stratum, we determined and presented the number of students in each class and did proportional allocation to size. And selected using simple random sampling (balloting) the class list served as a sampling frame. Then, 4th year-89

TABLE I: PRACTICE OF HAIs PREVENTION ACTIONS

Do you wash your hands before and after seeing patients?	Frequency	Percent (%)
Yes	216	99.1
No	2	0.9
How do you usually wash your hands while dealing with patients? Multiple responses	Yes (%)	No (%)
Wash with running water only	61 (28.2)	155 (71.8)
Wash with running water and bar soap	82 (38.0)	134 (62.0)
Wash with running water and hand-washing liquid	167 (77.3)	49 (22.7)
Wash with running water and skin disinfectant	75 (34.7)	141 (65.3)
Wash with alcohol hand rub	113 (52.3)	103 (47.7)
When do you wash your hands? Multiple responses	Yes (%)	No (%)
Before meals	177 (81.9)	39 (18.1)
Before performing invasive bedside procedures	124 (57.4)	92 (42.6)
Before and after examining patients	157 (72.7)	59 (27.3)
Before & after touching wounds, but not when gloved	65 (30.1)	151 (69.9)
Between two different procedures on different patients	138 (63.9)	78 (36.1)
When do you wear medical utility (non-sterile) gloves?	Frequency	Percent (%)
Using the computer, desk, or patient-care equipment in the ward	10	4.6
Prescribing drugs	13	5.9
Performing physical examinations on patients	94	42.9
Making clinical rounds	12	5.5
None of the above	77	35.2
Total	219	100

students were selected, 5th year-85 students were selected, 6th year-45 students were selected, a total of 219 students were selected.

Structured self-administered questionnaires were used for data collection. The questionnaires consisted of questions. Data collected was analyzed using Statistical Package for Social Sciences (SPSS) version 20. After entry, data was analyzed and results were illustrated with frequency tables. Data collected was analyzed using Statistical Package for Social Sciences (SPSS) version 20. After entry, data was analyzed and results were illustrated with frequency tables. Ethical approval was granted by the Bingham University Teaching Hospital Health Research and Ethics Committee (NHREC/21/05/2005/00659), while permission was granted by the College of Medicine and Health Sciences to seek permission to conduct the study. Informed consent was appropriately obtained from each participant in the study, using the consent form attached to the questionnaire which also explained the purpose of the study to them. Each study participant was duly informed that their participation in the study was voluntary and that they could decide to withdraw from the study at any point

in time. Participants were also assured of confidentiality of the information given.

3. RESULTS

3.1. Practice of HAIs Prevention Actions

In Table I, almost all (99.1%) of students claim that they wash their hands before and after seeing patients, 28.2% said they wash their hands with running water only, 38.0% wash with running water and bar soap, 77.3% wash their hands with running water and hand-washing liquid, 34.7% wash with running water and skin disinfectant, 52.3% wash with alcohol hand rub.

81.9% wash their hands before meals, 57.4% wash their hands before performing invasive bedside procedures, 72.7% wash before and after examining patients, 30.2% wash their hands before & after touching wounds, but not when gloved, 63.9% wash their hands between two different procedures on different patients.

Regarding the use of non-sterile gloves, 42.9% of respondents said they use them when performing physical examinations on patients, while 4.6% said they use them when using the computer, desk, or patient-care equipment in the ward, 5.9% said they use it when prescribing drugs, 5.5% use it when making clinical rounds.

Table II A shows the practice of use of personal protective equipment (PPE) during various activities in the hospital. Concerning wearing gowns, during visits to the neonatal intensive care unit: 56.2% said a protective gown should be worn, while 43.4% said it should not. When delivering a baby of an HIV Positive woman, 75.8% said they wore Surgical gowns, and 63.5% usually wear their gown when attending to patients with fecal incontinence. 70.3% said they wear gowns when they are treating septic wounds.

Concerning wearing face/nose masks 86.8% said they wore masks when transporting coughing patients out of the ward, 70.3% stated that they wore masks when irrigating septic wounds, 60.7% said they wore face masks whenever they were attending to patients with fecal incontinence, 76.3% said they wore face mask whenever they were delivering a baby of an HIV Positive woman, 51.6% said they wore face mask whenever they were visiting neonatal intensive care unit.

In Table II B, when referring to wearing goggles, 24.2% of students stated that they wore goggles while transporting coughing patients out of the ward, 23.3% stated that they wore goggles while drawing blood from the patient, 39.3% while irrigating a septic wound, 34.2% while Nasogastric suctioning, 61.65 while delivering a baby of an HIV Positive woman.

Concerning wearing face shields, 19.63% stated that they wore face shields while drawing blood from patients, 33.8% stated that they wore face shields while irrigating a septic wound, 26.0% stated that they wore face shields while Nasogastric suctioning, 21.95 stated that they wore face shield while visiting neonatal intensive care unit, 61.6% stated that they wore face shield while delivering a baby of an HIV Positive woman.

TABLE IIA: TYPES OF PERSONAL PROTECTION EQUIPMENT (PPE) WORN DURING HOSPITAL ACTIVITIES

Hospital events	Gown N (%)		Face/Nose Mask N (%)	
	Yes	No	Yes	No
Transporting coughing patients out of ward	96 (43.8)	122 (55.7)	190 (86.8)	26 (11.9)
Drawing blood from patient	100 (45.7)	118 (53.9)	45 (20.5)	171 (78.1)
Irrigating septic wound	154 (70.3)	64 (29.3)	133 (60.7)	83 (37.9)
Nasogastric suctioning	127 (58.0)	91 (41.6)	119 (54.3)	97 (44.3)
Performing lumbar puncture	119 (53.3)	99 (45.2)	80 (36.5)	136 (62.1)
Visiting neonatal intensive care unit	123 (56.2)	95 (43.4)	113 (51.6)	103 (47.0)
Performing physical examination	80 (36.5)	138 (63.0)	49 (22.4)	167 (76.3)
Attending to patients with fecal incontinence	139 (63.5)	79 (36.1)	133 (60.7)	83 (37.9)
Delivering a baby of an HIV Positive woman	166 (75.8)	52 (23.7)	167 (76.3)	49 (22.4)

TABLE IIB: TYPES OF PERSONAL PROTECTION EQUIPMENT (PPE) WORN DURING HOSPITAL ACTIVITIES

Hospital events	Goggles N (%)		Face shield N (%)	
	Yes	No	Yes	No
Transporting coughing patients out of ward	53 (24.2)	163 (74.4)	62 (28.3)	154 (70.3)
Drawing blood from patient	51 (23.3)	165 (75.3)	43 (19.6)	173 (79.0)
Irrigating septic wound	86 (39.3)	130 (59.4)	74 (33.8)	130 (59.4)
Nasogastric suctioning	75 (34.2)	141 (64.4)	57 (26.0)	159 (72.6)
Performing lumbar puncture	48 (21.9)	168 (76.7)	40 (18.3)	176 (80.3)
Visiting neonatal intensive care unit	56 (25.6)	160 (73.1)	48 (21.9)	168 (76.7)
Performing physical examination	22 (10.0)	194 (88.6)	29 (13.2)	187 (85.4)
Attending to patients with fecal incontinence	81 (37.0)	135 (61.6)	92 (42.0)	124 (56.6)
Delivering a baby of an HIV Positive woman	135 (61.6)	80 (36.5)	135 (61.6)	81 (37.0)

TABLE IIC: TYPES OF PERSONAL PROTECTION EQUIPMENT (PPE) WORN DURING HOSPITAL ACTIVITIES

Hospital events	Gloves N (%)		No PPE used N (%)	
	Yes	No	Yes	No
Transporting coughing patients out of ward	125 (57.1)	91 (41.6)	16 (7.3)	200 (91.3)
Drawing blood from patient	184 (84.0)	32 (14.6)	27 (12.3)	189 (86.3)
Irrigating septic wound	181 (82.0)	142 (64.8)	30 (13.7)	186 (84.9)
Nasogastric suctioning	174 (79.5)	42 (19.2)	29 (13.2)	186 (85.4)
Performing lumbar puncture	160 (73.1)	56 (25.6)	29 (13.2)	187 (85.4)
Visiting neonatal intensive care unit	128 (58.4)	88 (40.2)	32 (14.6)	184 (84.0)
Performing physical examination	129 (58.9)	87 (39.7)	62 (28.3)	153 (69.9)
Attending to patients with fecal incontinence	163 (74.4)	53 (24.2)	41 (18.7)	175 (79.9)
Delivering a baby of an HIV Positive woman	196 (89.5)	20 (9.1)	9 (4.1)	206 (94.1)

As shown in [Table IIC](#), concerning the use of gloves, 57.1% stated that they use gloves while transporting coughing patients out of the ward; 84.0% said that they use gloves while drawing blood from the patient; 82.0% stated that they use gloves while Irrigating septic wound; 79.5% claimed that they use gloves while Nasogastric suctioning; 73.1% stated that they use gloves while Performing lumbar puncture; 58.4% claimed that they use gloves while Visiting neonatal intensive care unit; 58.9% stated that they use gloves while Performing physical examination; 74.4% stated that they use gloves while attending to patients with fecal incontinence; 89.5% said that they use gloves while delivering a baby of an HIV Positive woman.

Concerning nonuse of any PPE, 7.3% did not use any PPE when transporting coughing patients out of the ward, 12.3% did not use any PPE when drawing blood from patients, 13.7% did not use any PPE when irrigating septic wounds, 13.2% did not use any PPE when carrying out Nasogastric suctioning, 13.2% did not use any PPE

when Performing lumbar puncture, 14.6% did not use any PPE when visiting neonatal intensive care unit, 28.3% did not use any PPE when Performing physical examination, 18.7% did not use any PPE when Attending to patients with fecal incontinence, 4.1% did not use any PPE when Delivering a baby of an HIV Positive woman.

Concerning cleaning of stethoscope with 70% alcohol, [Table III](#) shows that 45.7% of respondents never clean their stethoscope with antiseptic, 15.5% cleaned after examining each patient, 13.2% cleaned weekly, 11.4% cleaned monthly and another 11.4% of respondents clean daily.

Concerning how often the respondents wash their white coats, 34.2% said they wash twice a week, 32.4% wash weekly, 16.9% wash 3 times a week, 12.3% wash daily, 1.8% never wash it and 1.4% wash monthly.

[Table III](#) shows that a majority of respondents (83.6%) have never sustained a needle stick injury before, 13.7% have had such injury.

TABLE III: FREQUENCY OF CLEANING YOUR STETHOSCOPE WITH ANTISEPTIC (70% ALCOHOL) AND WASHING THE WARD COAT

	Frequency	Percent (%)
After examining each patient	34	15.5
Daily	25	11.4
Weekly	29	13.2
Monthly	25	11.4
Never	100	45.7
I don't know	6	2.3
Total	219	100.0
How often do you wash your ward coat?	Frequency	Percent (%)
Daily	27	12.3
Three times a week	37	16.9
Twice a week	75	34.2
Weekly	71	32.4
Monthly	3	1.4
Never	4	1.8
Total	219	100.0
Have you ever sustained a used needle stick injury?	Frequency	Percent
Yes	30	13.7
No	183	83.6
Total	219	100.0
Main Reason for non-use of PPE		
High cost	54	24.7
PPE Not available	112	51.1
Difficulty in using	33	15.1
No reason	20	9.1
Total	219	100.0

Main Reason for non-use of PPE include High cost (24.7), PPE Not available (95.1%), difficulty in using (15.1%), and No reason (9.1%).

Table IV is concerning the practice of HAI prevention; last infectious waste disposal was in a black bag for 11.9% of the respondents. 29.7% of respondents practice the disposal of infectious waste from patients in red garbage bag, followed by 21.0% disposing in the yellow garbage bag. Majority (37.4%) had no idea. Furthermore, while 37.9% of respondents think BHUTH has good infection control management practices, 47.0% were of a contrary opinion. The table above shows that 150 (68.5%) of respondents had good practice of HAI prevention, while 69 (31.55) had a poor practice of HAIs prevention.

4. DISCUSSION

Our study showed participants generally had two-thirds good practice of HAI prevention and one-third with poor practice. All as a result of practices regarding practices such as hand hygiene, equipment hygiene and cleaning of stethoscopes. This was in keeping with the outcome of a study among a cohort of South Asian medical students on hygiene practices during medical training [17].

Regarding hand washing, about 167 (76.3%) and 113 (51.6%) affirmed to washing their hands with running water/soap and alcohol hand rub respectively. Also, 71.7% of respondents said they wash their hands before and after

TABLE IV: PRACTICE OF HAI PREVENTION

Do you think this hospital has good infection control management and practices?	Frequency	Percent (%)
Yes	83	37.9
No	103	47.0
No idea	33	15.1
Total	219	100.0
Location of last infectious waste from patient's disposal	Frequency	%
Yellow garbage bag	46	21.0
Black garbage bag	26	11.9
Red garbage bag	65	29.7
No idea	82	37.4
Total	219	100.0
Practice of HAI prevention and control	Frequency	%
Good practice	150	68.5
Poor practice	69	31.5
Total	219	100.0

examining each patient. These are the accepted standards of practice regarding hand hygiene as recommended by WHO [18]. This is similar to findings in a study done in Northern Nigeria [19] which assessed the Infection control and Practice of standard precautions and showed that over 70% usually wear gloves before handling patients or patients' care products. This was however in contrast to findings among medical students in Portharcourt, [20] Nigeria, where only 37.6% washed their hands regularly after interacting with patients, while 33.9% did so only after the day's work. Hand hygiene is the most important tool in preventing the transmission of nosocomial infections as the hands of Healthcare Workers (HCWs) are the most common mode of transmission of pathogens to patients. Factors that contribute to poor adherence to hand hygiene include poor access to hand-washing facilities (sinks), the time required to perform standard hand washing, irritant contact dermatitis associated with frequent exposure to soap and water, high workloads, knowledge deficits among HCWs, and the failure of administrative leaders to make hand hygiene an institutional priority [21]. According to WHO [18], the six indications of hand washing include before patient contact, before aseptic task, after body fluid exposure risk, after patient contact, after gloves are reduced and after contact with patient surroundings.

Furthermore, regarding the washing of ward coats, it was found that a majority of the participants in this study washed their ward coats at least once a week (95.8%) as compared to 3.2% who did this less regularly. This agrees with a recommendation in an article published by Shelly Reese in 2016 on washing the ward coat at least once in a week [22].

This study also found that a significant majority of respondents have reported never sustaining a needle stick injury, showing good practice as regards proper handling of sharps as recommended by the CDC where dangerous practices such as bending and recapping sharps were discouraged and immediate disposal of sharps in a proper disposal bin was advised [23].

However, regarding the cleaning of stethoscopes with antiseptic solution, only 15.5% of respondents do this after examining each patient as recommended by the CDC [24]. A significant proportion of the participants in this study (45.7%) never cleaned their stethoscopes. This shows poor practice, with attendant harmful effects on the well-being of both the medical students and the patients, as the stethoscope remains a cardinal instrument in carrying out clinical examinations. This finding agrees with results obtained from a study among 4th and 5th-year medical students at the University of Belgrade, where 40% and 30% respectively reported cleaning their stethoscope at least once a day [25].

Regarding the proper disposal of healthcare waste, the WHO recommends the use of red bags for disposal of infectious waste [26]. While 29.7% of respondents chose this medium, 32.9% selected inappropriate waste disposal bag colours, while 31.1% had no idea. It is important therefore that early in the course of their training, medical students should be taught about the proper practice of handling infectious waste in the hospital setting.

It is a bit of a cause of worry to note that some students did not use Personal protective equipment when transporting coughing patients out of the ward when drawing blood from patients when irrigating septic wounds when carrying out Nasogastric suctioning, when performing lumbar puncture. It is against the principles of infection control to not use any PPE when visiting the neonatal intensive care unit, when attending to patients with fecal incontinence and when delivering a baby of an HIV Positive woman. These unwholesome practices require efforts to change. This category of students should be retrained on the dangers of breaching infection prevention and control practices.

Personal protective equipment, or PPE, is an important part of healthcare safety. It has been described as “specialized clothing or equipment”, worn by an employee for protection against infectious materials. The types of PPE used in healthcare settings include gloves, gown/s/aprons, masks and respirators, goggles and face shields [27]. Non-use of PPE and other practices resulted in the fact that more than two-thirds of the respondents had good practices of HAI prevention, while one-third had poor practices of HAIs prevention. This is slightly higher than the findings from a study done in Debre Markos referral hospital, Northwest Ethiopia [11]. It was found that 57.3% of healthcare workers had good practices towards infection prevention activities. This poor practice among one-third of respondents may be due to non-availability of the personal protective equipment (PPE) or even water for basic hand hygiene and sanitation [18], [28]. This study also reveals the main reason for the non-use of PPE among the students, this includes High cost (24.7%), PPE Not available (951.1%), difficulty in using (15.1%), and No reason (9.1%). Solving these challenges will help increase the practice of HAI preventive measures.

5. CONCLUSION

Almost all (99.1%) of students claim that they wash their hands before and after seeing a patient, 57.4% wash

their hands before performing invasive bedside procedures, 72.7% wash before and after examining patients, 86.8% said they wore masks when transporting coughing patients out of ward, 70.3% stated that they wore mask when irrigating septic wound, 51.6% said they wore face mask whenever they were visiting neonatal intensive care unit. The majority of respondents (83.6%) have never sustained a needle stick injury before, main reasons for non-use of PPE include High cost (24.7), PPE Not available (951.1%), difficulty in using (15.1%), No reason (9.1%). Generally, more than a third of 150 (68.5%) respondents had good practice of HAI prevention, while 69 (31.55) had poor practice of HAIs prevention.

6. RECOMMENDATIONS

6.1. To the Government/Non-Governmental Organizations/Teaching Hospital

There is a great need to improve the practice of infection prevention and control through quarterly sensitization and reminders to healthcare workers. It will be useful to create simulations and practical demonstrations on methods of use of PPE to increase ease of use by participants. Continuous medical education sessions on the prevention and control of HAIs to boost practice among the awareness of healthcare workers and medical students. There is a need to make available the necessary Personal protective equipment to ease utilization.

6.2. To the Students

Students should work towards improved IPC practices through peer support and education. Students should ensure participation in training programs organized by the institution aimed at improving good practices regarding HAIs. They are encouraged to continue good personal and equipment hygiene practices.

CONFLICT OF INTEREST

Authors declare that they do not have any conflict of interest.

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