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PRACTICE AND BARRIERS TO STANDARD PRECAUTIONS COMPLIANCE BY HEALTH WORKERS IN SPECIALIST HOSPITAL YOLA, ADAMAWA STATE

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ABSTRACT

Background: Health care workers (HCWs) are at risk of various occupational hazards including exposure to blood borne infections such as HIV and hepatitis B and C virus from sharps injuries and contact with body fluids. Standard precautions are set of measures formulated to prevent transmission of blood borne pathogens when providing health care.

Method: A cross sectional survey of 182 eligible respondents from the Specialist Hospital, Yola, participated in the study. This study aims to assess the knowledge of standard precaution and barrier to compliance among health workers of Specialist hospital, Yola, Adamawa State. A convenience sampling technique was adopted for this study and data collected using a self-administered structure questionnaire and analyzed using SPSS version.

Result: Of the 182 health workers, findings revealed that 84 (30.5%) are very familiar with the term standard precautions while 98(69.5%) are familiar. 89.4% of the respondents agreed that hands need to be washed before and after any direct contact with the patients while 10.6% disagreed. All respondents agreed that gloves need to be removed after the procedure and after attending to each patient. 81.4% of the respondents agreed that it is necessary to cover mouth and nose when coughing and sneezing while 18.6% disagreed. 89.4% of the respondents agreed that lack of professional experience, knowledge and training in standard precaution can serve as a barrier to compliance with standard precaution.

Conclusion: Based on the findings of the study, the following recommendations were made among others: enhancement of training and education of staff: hospital administrators should implement regular and comprehensive training programs for all healthcare workers, resource allocation: hospital Administrators should ensure a consistent and adequate supply of personal protective equipment (PPE) and infection control resources, policy enforcement and monitoring.

Keywords: Knowledge, Barrier, Compliance, Standard Precautions

INTRODUCTION

Standard precautions (SPs) are designed by the Centers for Disease Control and Prevention (CDC) to minimize all pathogens' transmission risks, including blood-borne pathogens in healthcare units[1]. According to Bouchoucha[2], the CDC expanded the isolation precaution concepts in 1996 to form the SPs. The SPs included and expanded the elements to encompass all body fluids and blood except sweat[3]. The CDC[4] documented SPs elements in 2007, including hand hygiene, personal protective equipment (PPE), cough etiquette or respiratory hygiene, sharp safety, safe injection practice, sterile instruments and devices, and clean and disinfected environmental surfaces[5]. PPE refers to equipment that nurses wear to protect themselves from contact with or exposure to infectious pathogens, such as face masks, gloves, coats, and gowns[6]. It protects nurses from multiple patient interactions, covering the clothing and skin likely to come into contact with saliva, blood, and infectious materials[6]. Another element of SPs is environmental infection prevention and control policies, indicating that ecological surfaces are also part of the strategy. Cleaning eliminates important microorganisms from environmental surfaces and must be followed by disinfection to destroy pathogens[7].

The exposure of a susceptible host to organisms such as bacteria, fungi, parasites and viruses result in infectious disease conditions. Infectious diseases are among the top 10 leading causes of death in the World[8]. According to the National Center for Health Statistics, the number of visits to physician's offices for infectious diseases was 17.8 million in 2014 with 94, 770 people dying from some forms of infectious diseases[8]. Infection prevention and control are essential for creating a safe healthcare environment for patients, families, and staff because they reduce the likelihood of spreading diseases from one person to another[9]. According to the Centers for Disease Control and Prevention (CDC), an average of 1,383,700 people are residing in hospitals each day[10]. Working with this population therefore necessitates providing a safe environment where they can thrive and improve their quality of life. Research estimates by Burdsall and his colleagues[11], show 1.6 million to 3.8 million infections annually. The economic burden of hospital acquired infections (HCAIs) is enormous. SPs have been regarded as essential in the fight for control and prevention of infection and are considered an effective means of protecting healthcare practitioners, patients and the public[12]. One of the objectives of SP is to prevent and reduce HCAI's[13].

Health care workers (HCWs) are at risk of acquiring blood and body fluid borne infections such as hepatitis and human immune deficiency virus (HIV) etc. through accidental injuries and direct exposure to body fluids[10]. These body fluids include cerebrospinal fluid (CSF), peritoneal fluid, pleural fluid, pericardial fluid, synovial fluid breast milk, semen and urine. Saliva, vomitus, perspiration, sputum and nasal secretions are less established sources of infection. The risk of injuries at work place is higher in developing countries compared to the developed nations[14]. This is attributable to more prevalent blood borne pathogens in low-income countries especially sub-Saharan African countries. The effect of percutaneous injuries ranges from psychological trauma through chronic diseases to death[15]. The safety of HCWs is therefore a global health concern[16] as it is important that measures are in place for protection. Universal Precautions which later translated to Standard Precautions

was introduced by Centre for Disease Control (CDC).

HCWs are at risk for exposure to pathogens, but among those nurses are the group that is most affected[16]. It has been estimated that > 50% of nurses experience at least one needlestick injury in their careers[17]. Compliance with Standard Precaution has been shown to reduce the risk of exposure to blood and body fuids[6]. The CDC's focus on SPs is to promote health as well as to focus attention on infectious disease prevention and control[10]. Healthcare workers are more closely to adhere to infection control standard precautions when they realize the value of it as they felt motivated to follow the guidance because of fear of infecting themselves or their families, or because they felt responsible for their patients[18]. These infection control standard precautions include hand and respiratory hygiene, the use of appropriate personal protective equipment (PPE) according to a risk assessment, practice safe injection, safe waste disposal management, proper linens, environmental cleaning, and sterilization of patient care-related equipment[19].

Compliance with Standard Precaution The practice of standard precaution is widely promoted to protect HCWs from exposure to healthcare associated infections[20]. However, some studies showed that compliance with Standard Precaution among nurses is still suboptimal and inconsistent[21,20,22,23,24]. Compliance, defined as the degree to which a person adheres to instructions, is essential to infection control but has been found to be suboptimal among HCWs in the prepandemic era[25].

Many factors are responsible for compliance or non-compliance to the basic principles of universal precautions among health care providers[26]. From the available literature, the knowledge and practice of standard precautions and barriers to compliance among health workers in specialist hospital Yola, Adamawa State has not been assessed. Therefore, this study is conducted to assess the knowledge and practice of standard precautions and barriers to compliance among health workers in specialist hospital Yola, Adamawa State.

MATERIAL AND METHODOLOGY

Design of the Study

Descriptive cross-sectional design was used to assess the practice and barriers to standard precautions compliance by health workers in specialist hospital Yola, Adamawa State

Participants

The target population for this study is all registered HCWs working in Specialist hospital, Yola, who are about 305 in number. Criteria includes registered HCWs working in Specialist Hospital Yola, having at least one-year service experience and willing to participate in the study.

Sample and Sampling Methods

A convenience sampling technique was adopted for this study where any HCW in the hospital was chosen as we met them. The sample for this study consisted of 190 HCWs working in specialists hospital Yola, Adamawa State. This was calculated using Yaro Yamane's formula for determining the sample size of any definite population. There are about three hundred and 305 HCWs working in Specialist hospital, Yola. The number of HCWs was gotten from the hospital record.

The sample size was determined using **Taro Yamane's formula.**
$n = N / 1 + (Ne^2)$

Where, n= Sample size
N= Total population (364 HCWs) e= 0.05 (constant)
364/1 + (364x0.0025)
364/1 + 0.91
364/1.91 = 190

Data collection

The respondents were seen at their various units, in the Specialist Hospital Yola. The purpose and procedures of the research study was explained to them in English language. A self-structured questionnaires were administered to obtain data. The questionnaire was grouped into sections A-C for demographic data of the respondents, level of practice of standard precautions among health workers of the respondent's delivery among health workers and the barriers to compliance of standard precautions among health workers, respectively. The questionnaires were numbered to ensure retrieval and completeness. The questionnaires were distributed and retrieved immediately after being filled by the respondents.

Data Analysis

The returned copies of the completed questionnaire were properly cross-checked for completeness of responses. Data obtained were coded and analysed using SPSS version 20. Descriptive statistics such as frequency counts and percentages were used to answer the research questions and present the results. Data generated for the study were analyzed on item-by-item basis.

Ethical Consideration

An introductory letter was written and submitted to heads of the various departments in order to facilitate entry into the hospital for research purposes. Permission was obtained from the facility management to be allowed to conduct the study in the hospital. Informed consent was obtained from respondents and assurance of anonymity and confidentiality and their wishes and rights were respected throughout the period of data collection including the right to withdraw from the study at any time they wish. Respondents were treated with respect and dignity. Their rights and welfare were protected. All the findings of this study were used with a high level of confidentiality.

Criteria for Inclusion and Exclusion

This study included all health workers in specialist hospital Yola, Adamawa State, who were present in the clinic during the time of thiss study. All health workers from different health facility were excluded.

Validity and Reliability of the instrument.

The validity of the instrument was established by giving a drafted copy of the developed questionnaire to other experts in public health. The main task was to critically examine the questionnaire. The criticisms and suggestions made were used to modify the instrument that was used for data collection. In order to determine the reliability of the instrument, the test-retest method was used in this study. Copies of the questionnaire were administered to ten HCWs in selected health centers of Yola South Local Government Area, Adamawa State. Copies of the questionnaire were re-administered to the same HCWs again after two weeks and the results were similar.

RESULTS

Table 1 shows the demographic data of the respondents. Out of one hundred and eighty-two (182) respondents 38% of the respondents were male while 62% were female. One hundred and eighty-two (182) respondents 38% were within age 21-25 years, 29% were within age 26-30 years, 7% were within age 31-35 years, 11% were within age 36-40, 14$ were within age 41 years and above.

Table 1: Demographic Data of Respondents (N=182)

S/No.	Items	Responses	Frequency	Percentage (%)
1	sex	Male Female Total	70 112 182	38 62 100
2	Age	18-25 years 26-30 years 31-35 years 36-40 years 41 years and above Total	70 52 13 27 20 182	38 29 7 11 14 100
3	Tribe	Yoruba Igbo Hausa Others Total	46 39 97 0 182	26 21 53 0 100
4	Religion	Christianity Islam Traditional worshippers Total	77 105 0 182	42 58 0 100
5	Educational qualification:	RN BNSC Others Total	93 71 18 182	51 39 10 100
6	Marital status	Single Married Divorced Widow/Widower Total	93 72 13 4 182	51 40 7 2 100

Table 2 shows the level of practice of standard precautions among health workers of the respondent's delivery among health workers. Item on hand washing technique after touching a patient is a good practice, 107 (58%) of the respondents strongly agreed, 65(36%) agreed, 10 (6%) undecided, none strongly agreed, and none disagreed. Item on dispose sharps in the safety box after each procedure, 80 (44%) of the respondents strongly agreed, 100 (55%), 2 (1%) undecided, none strongly agreed, and none disagreed. Item on wearing gloves, facemasks, goggles, aprons/gowns is necessary before handling patients. 74 (41%) of the respondents strongly agreed, 107(58%) agreed, 1(1%) undecided, none strongly disagreed, and none disagreed.

Tables 2: Practice of Standard Precautions Among Health Workers

S/No.	Items	Respondents	Frequency	Percentage
7	Hand washing technique after touching a patient is a good practice	SA A UD SD D Total	107 65 10 - - 182	58 36 6 - - 100
8	Dispose sharps in the safety box after each procedure	SA A UD SD D Total	80 100 2 - - 182	44 55 1 - - 100
9	Wearing glove, facemasks, goggles, aprons/gowns is necessary before handling patients	SA A UD SD D Total	74 107 1 - - 182	41 58 1 - - 100
10	Do you Wash or decontaminate hands before and after touching patient's surroundings?	SA A UD SD D Total	92 90 - - - 182	51 49 - - - 100

Table 3 shows the barriers to compliance of standard precautions among health workers. Item on compliance during emergency puts patients at risk, 102 (56%) of the respondents strongly agreed, 58 (32%) agreed, 22 (12%) undecided, none strongly disagreed, and none disagreed. About complying with standard precautions interferes with the ability to provide care. 178 (98%) of the respondents strongly agreed, 2 (1%) agreed, 2 (1%) undecided, none strongly agreed, and none disagreed. Item on unavailability of PPE, 182 (100%) of the respondents strongly agreed, none agreed, none undecided, none strongly disagreed, and none disagreed. Item on practice of standard precautions is time consuming, 178 (98%) of the respondents strongly agreed, 2 (1%) agreed, 2 (1%) undecided, none strongly agreed, and none disagreed.

Table 3: Barriers to Compliance of Standard Precautions Among Health Workers

S/No.	Items	Respondents	Frequency	Percentage
11	Compliance during emergency puts patients at risk.	SA A UD SD D Total	102 58 22 - - 182	56 32 12 - - 100
12	Complying with standard precautions interferes with the ability to provide care.	SA A UD SD	178 2 2 -	98 1 1 -

		D Total	- 182	- 100
13	There is unavailability of PPE.	SA A UD SD D Total	182 - - - - 182	100 - - - - 100
14	Protective gear is uncomfortable.	SA A UD SD D Total	178 2 2 - - 182	98 1 1 - - 100
15	Standard precautions is time consuming	SA A UD SD D Total	182 - - - - 182	100 - - - - 100
16	Unavailability of infection control policies.	SA A UD SD D Total	182 - - - - 182	100 - - - - 100
17	Lack of professional experience, knowledge and training in standard precautions serves a barrier to compliance with standard precaution.	SA A UD SD D Total	182 - - - - 182	100 - - - - 100

Discussion

The study revealed that a significant proportion of health workers in Specialist Hospital Yola had a good practice of standard precautions. They practices the basic principles, such as hand hygiene, the use of personal protective equipment (PPE), and safe injection practices. This is consistent with the findings of previous studies by [27,28], which have indicated that health workers generally possess a solid knowledge base practices standard precautions. In contrast, poor compliance with the use of personal protective equipment among low cadre health workers was reported[29]. However, there were variations in the practices among different healthcare professional categories. Nurses consistently demonstrated higher levels of practices compared to other healthcare workers, such as support staff. This difference could be attributed to variations in training, experience, and job responsibilities. It highlights the need for targeted educational interventions to ensure that all healthcare workers, regardless of their

role, have a comprehensive understanding of standard precautions.

Despite the reasonably good practices of standard precautions, the study identified several barriers to compliance among health workers in Specialist Hospital Yola. These barriers include: lack of adequate resources: a common barrier was the shortage of essential resources, such as PPE, in the hospital, this does not only hindered compliance but also raised concerns about the safety of both patients and healthcare workers. Time constraints: the demanding work environment in the hospital often left healthcare workers with limited time for proper adherence to standard precautions. High patient loads, emergency situations, and the pressure to provide quick care contributed to this challenge. Inadequate Training and Education: while the overall knowledge was relatively good, some health workers expressed a need for ongoing education and training. In contrast, the lower levels of compliance among low cadre health professionals may be related to limited knowledge and training in infection control compared with the higher cadre personnel such as doctors and nurses[29]. Continuous updates on best practices, as well as refresher courses, were identified as potential solutions. Perceived low risk: Some health workers, especially those with years of experience, perceived their risk of exposure to infectious diseases as low. This perception could lead to complacency and reduced compliance. Lack of Enforcement: the absence of a strict policy enforcement mechanism within the hospital was cited as a significant barrier. Health workers felt that compliance was not consistently monitored, which reduced the incentive to adhere to standard precautions.

However, some studies found that because of the high work loads of HCWs, particularly in developing countries, and time limitations, wearing different protective wear and the rigours of hand washing in between handling patients is considered burdensome, interfering with their duties and placing patients at the risk of escalating sickness[30,31]. As a matter of public health policy, health care facilities must ensure that hand hygiene and proper use of gloves must be optimised to protect the patient and HCWs and indirectly minimise treatment costs of cross infections as a result of suboptimal hand hygiene care. Hugonnet, Perneger and Pittet [29] asserted that alcohol-based hand rubs have been shown to improve health care workers' compliance with hand hygiene practices. In some studies, HCWs mentioned that patients are uncomfortable with protective wear[32] and, HCWs indicated that the use of protective wear may cause psychological distress among patients[33]. To encourage the wearing of PPEs, the work environment must be improved especially for developing countries. Suggested improvements are the inclusion of cooling systems such as fans and air conditioners to make wearing of PPEs more comfortable. Patients must be made aware that PPEs also protect them from infection; this may minimise psychological distress. As much as possible, all health workers should be involved in decisions governing SP.

Conclusion

The research findings provide valuable insights into the current state of practice and barriers to standard precautions compliance in hospital setting. This study has shed light on the practice of standard precautions and the barriers to compliance among health workers in Specialist Hospital Yola, Adamawa State. While health workers generally possess a good practice of standard precautions, there are notable variations among different professional categories. The identified barriers to compliance, including resource

shortages and time constraints, should be addressed to ensure a safer healthcare environment. Promoting a culture of safety and adherence to standard precautions is essential to protect both healthcare workers and patients. This study findings provide a foundation for targeted interventions and policy changes within Specialist Hospital Yola, with the potential to improve compliance and reduce the risk of healthcare-associated infections.

Recommendations

Based on the findings of the study, the following recommendations were made: hospital administrators should implement regular and comprehensive training programs for all healthcare workers; hospital Administrators should ensure a consistent and adequate supply of personal protective equipment (PPE) and infection control resources; infection control committee should strengthen the enforcement of hospital policies and regularly monitor compliance; communication/information unit should develop communication materials highlighting the importance of standard precautions and offer regular awareness campaigns.

Limitation of the study

The researcher encountered some difficulty among the health workers, some of the health workers were reluctant to fill the questionnaire because they claim they do not have time for it or were not interested at all.

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