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ATTITUDE AND PRACTICE OF HEALTHCARE WORKERS TOWARDS INFECTION PREVENTION STRATEGIES IN PUBLIC HOSPITALS IN EBONYI STATE

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Abstract
This study was aimed at determining the Attitude and Practice of Healthcare Workers towards Infection Prevention Strategies in Hospitals in Ebonyi State. The study was guided by four specific purposes, four research questions and three null hypotheses. The study adopted a cross sectional survey design to obtain information on Attitude and Practice of healthcare workers towards infection prevention strategies in public hospital in Ebonyi state. The population of the study comprised of 1922 doctors and nurses working in Government owned hospital in Ebonyi state. 192 respondents were selected as the study sample using Nwanna formular. Multi staged sampling technique was used to select the study sample. The instrument for data collection was a self developed questionnaire titled Attitude and Practice of Healthcare Workers towards Infection Prevention Strategies Questionnaire (APHWTIPSQ) developed on a 4 point likert scale with 28 items, the face validity of instrument was done by the supervisor while the content validity was done by experts in the Faculty of Education. The reliability of the instrument was ascertained by determining the internal consistency using Cronbach alpha which yielded a co-efficient index value of .89. Data were analysed using mean scores and standard deviation while the null hypothesis was tested at 0.05 level of significance and are presented in tables. The finding from this study revealed that the attitude and practice of Healthcare Workers towards Infection Prevention Strategies in Hospitals in Ebonyi State were adequate with their respective grand mean ($\bar{x}$ = 2.92), ($\bar{x}$ = 2.82) above the criterion mean set for the study($\bar{x}$ = 2.5). Findings also showed that gender has no influence on the attitude and practice of Healthcare Workers towards transmission based precaution of infection prevention strategies in public hospitals in Ebonyi State. It is recommended that the Federal and State Ministry of health should adopt the World Health Organization infection prevention protocol to ensure that a healthier environment is provided for healthcare workers to practice. They should also organize training and supervision session to assess the quality of practice from time to time to enable the healthcare workers maintain good prevention strategies in hospital facilities.

Introduction
Medical treatment is intended to save life and improve health, and all health workers have the responsibility to prevent transmission of health-care associated infections. Adherence to infection prevention strategies is part of that responsibility that protects patients and health workers (World Health Organization, 2010). However, this appears not to be the case as many healthcare workers and patients have acquired nosocomial infections during and after their therapeutic sessions (Maosa, 2012).

Nosocomial infections, otherwise known as healthcare associated infections are those infections acquired in hospital or healthcare service unit, that first appear 48 hours

or more after hospital admission or within 30 days after discharge following in patient care (Revelas, 2012). They are unrelated to the original illness that brings patients to the hospital and neither present nor incubating as at the time of admission (Horan & Gaynes, 2004). There are several reasons why nosocomial infections are even more alarming in the 21st century. These include, hospitals housing large number of people who are sick and whose immune system are often in a weakened state, increased use of outpatient treatment meaning that people who are in hospital are sicker on average, many medical procedures that by pass the body's natural protective barriers, medical staff moving from patient to patient thus providing a way for pathogens to spread, inadequate sanitation protocols towards uniforms, equipment sterilization, washing and other preventive measures that may either be unheeded by hospital personnel or too lax to sufficiently isolate patients from infectious agents and lastly the routine use of antimicrobial agents in hospitals creates selection pressure for the emergence of the resistant strains of microorganisms (Revelas, 2012).

Realizing the importance of prevention strategies in hospitals to world health, various international organizations accreditation including governmental agencies, national associations and organizations, World Health Organization, United Nations Environmental programme, United Nations Children's Fund and various countries have made commendable efforts in checking these infections (Samuel, Kayode, Musa, Nwigwe**,** Aboderin Salami & Taiwo 2010). However, after about three decades of nosocomial infections surveillance and control in hospitalized patients worldwide, nosocomial infections remain a serious problem for hospitals today (Samuel, et al. 2010).

Numerous studies document the pivotal role of Healthcare Workers (HCWs) in the propagation of micro-organisms within the healthcare environment and ultimately to patients (Maosa, 2012). A healthcare worker is an individual who provides preventive, curative, promotional or rehabilitative health care services in a systematic way to people, families and communities. It has been shown that organisms are capable of surviving on HCWs hands for at least several minutes following contamination. Thus, if hand hygiene practices are sub-optimal, microbial colonization is more easily established and/or direct transmission to patients or a fomite in direct contact with the patient may occur. Based on this evidence and the demonstration of its effectiveness, optimal hand hygiene behaviour is considered the cornerstone of Healthcare Associated Infection (HCAI) prevention (Allegranzi, 2009). Hand hygiene is the leading measure for preventing the spread of antimicrobial resistance and reducing healthcare-associated infections (HCAIs), but healthcare worker compliance with optimal practices remains low in most settings (Allegranzi, 2009).

Healthcare workers should be aware of precautions like standard and transmission-base precautions. Standard precautions are sets of basic infection prevention

practices intended to prevent transmission of infectious diseases from one person to another such as hand washing and use of protective garments. while transmission-based precautions are additional infection prevention precautions in health care, and the latest routine infection prevention practices applied for patients who are known or suspected to be infected or colonized with infectious agents. Therefore, it is important for the health care workers to adopt proper or positive attitude and practices of infection prevention strategies to enable them checkmate the spread of infectious diseases within healthcare facilities.

Statement

Globally 40% of hospital associated infections among HCWs are due to occupational exposure. Most exposures are caused by blood or body fluids especially due to needle stick injuries (NSIs) which pose substantial risk (WHO, 2002). The increased incidence of NSIs in HCWs is known to arise from high risk activities with low safety measures.

Risky practices like careless handling of contaminated needles, unnecessary injections on demand, re-use of inadequately sterilized needles, not using personal protective equipment (such as face masks, apron, goggles, hand gloves, boots etc), hand washing and improper disposal of hazardous fluids worsens the potential risk of occupational transmission of these hospital associated infections among HCWs and patients.

Recent events in Ebonyi state based on the series of outbreaks of infectious diseases has led to different declaration by the state government. According to the Vanguard Newspaper March 3, 2016, speaking on behalf of the state governor, the secretary to the state government, Prof Ben Odoh said Ebonyi State government has declared State of Emergency on the outbreak of Lassa fever virus due to its persistence occurrence in the state. Health facilities are not left out in the risk and damage of this condition as this had led to the death of many doctors and nurses in the course of their duty,

Based on the above the researcher wishes to carry out a study to assess health care worker's attitude and practice towards infection prevention strategies in health facilities in Ebonyi State, to identify how they carry out their procedures for infected or suspected infection cases and their attitude towards standard precautions and transmission based precaution procedures developed by international organizations. There is scarcity of literature towards the Attitude and Practice of Infection Prevention Strategies among Healthcare Workers in Ebonyi State, this study was conducted to address this gap.

The main purpose of this study is to investigate the attitude and practice of healthcare workers towards infection prevention strategies in public hospitals in Ebonyi state. Specifically, the study determined the:

1. Attitude of healthcare workers towards the standard precautions of infection prevention strategies in public hospitals in Ebonyi state.
2. Attitude of healthcare workers towards transmission base precautions of infection prevention strategies in public hospitals in Ebonyi state.
3. Practice of healthcare workers towards the standard precautions of infection prevention strategies in hospitals in Ebonyi state.

The findings of this study may be of immense benefit to the ministry of health, the hospital management, healthcare workers, patients, future researchers and the society at large when published it maybe easily accessible to them. To the Ministry of health, this study will provide the needed information for the formulation of policies and programmes on safety precautions required by healthcare workers on the use of healthcare facilities and care of patient to avoid infections transmission. It will help the Ministry of Health to outline necessary equipment and materials for prevention of infection and take care of health care workers to enable them to be healthy for their client.

This study was delimited to the attitude and practice of healthcare workers towards infection prevention strategies in public hospitals in Ebonyi state. It was also delimited to their attitude and practice towards standard precautions and transmission based precautions. It was delimited to health workers working inthree main types of healthcare facilities available within the state (primary, secondary and tertiary institutions). The study is delimited to doctors and nurses who work in this healthcare facilities.

The following research questions guided the study.
1. What is the attitude of healthcare workers towards the standard precautions of infection prevention strategies in hospitals in Ebonyi state?
2. What is the attitude of healthcare workers towards transmission base precautions of infection prevention strategies in public hospitals in Ebonyi state?
3. What is the standard precautions of infection prevention strategies adopted by healthcare workers in public hospitals in Ebonyi state?

The following null-hypotheses have been formulated for the study and were tested at 0.05 level of significance.
Ho1: There is no significant difference between the mean ratings of male and female healthcare workers towards their attitude on standard precautions of infection prevention strategies in hospitals in Ebonyi state.

Ho2: There is no significant difference between the mean ratings of male and female healthcare workers towards their attitude on transmission base precautions of infection prevention strategies in hospitals in Ebonyi state.

Ho3: There is no significant difference between the mean ratings of male and female healthcare workers towards their practice on standard precautions of infection prevention strategies in hospitals in Ebonyi state.

As needle stick injuries, workplace exposures and infection transmission rates.

Only recently has literature emerged examining healthcare associated infections. Several studies have been published on adherence to infection prevention practices but no literature was found examining healthcare workers' attitude and practice of infection prevention strategies specifically in Ebonyi State, demonstrating this to be a very new area of investigation. A contextual model that has been used within the health sector, the Health belief model was used to frame this study. As important constructs in this model, a review of attitude and practice of infection prevention strategies were presented including evidence of their relevance to worker and patient safety. The strategies employed to enhance worker safety may not only result in a healthier workforce but a safer and healthier patient population as well. This study intends to fill n the gaps in literature experienced by the health workers attitude and practice of infection prevention strategies as it relates to them.

In this chapter the researcher provides a description of the methods adopted to conduct this study under the following sub-headings: research design, area of the study, population of the study, sample and sampling technique, instrument for data collection, validity of the instrument, reliability of the instrument, method of the data collection and method of data analysis.

The study adopted cross sectional survey design to accomplish the purpose of the study. Eboh (2009) defined cross sectional survey research as a study which focuses on comparing as well as describing groups or phenomena based on observation made at one time. Osuala (2004) further wrote that cross-sectional research is used to examine one variable in different groups that are similar in all other characteristics. It involves using different groups of people who differ in the variable of interest but share other characteristics, such as socio-economic status, educational background, and ethnicity.

This design is considered most appropriate because it has been used by Mahmoud, Mostafa, Latif and Mohammad (2015) who conducted a study on knowledge, attitudes, and practices (KAP) of hand hygiene among medical residents at Imam Hossein hospital, Tehran, Iran. The use of Cross sectional design will help the researcher to appreciate the population as it cuts across various groups of health care workers in Ebonyi State.

The area of the study was Ebonyi state. Ebonyi state is geographically located in south eastern part of Nigeria. Ebony state is sub divided into three (3) senatorial district which are Ebonyi North, Ebonyi South and Ebonyi Central with thirteen (13) local

government areas. The senatorial districts and local government areas are as follows. Ebonyi north is made up of Abakaliki, Ebonyi, Ishielu, Ohaukwu and Izzi local government area, Ebonyi central is made up of Ikwo, Ezza North and Ezza South local government area while Ebonyi South is made up of Afikpo North, Afikpo South, Ivo, Ohaozara and Onicha local government area. In each of these local government areas mentioned, there are about 15 to 18 health care facilities. The choice of Ebonyi state is considered most appropriate because it is one of the States in the southern eastern part of Nigeria that there has been continuous outbreak of infections which had led to the death of her healthcare personnel. The researcher is a native of the state and at the same time a resident of the area. Ebonyi state is also considered most appropriate in this study because it has all the three types of healthcare delivery settings and facilities that make up the health care delivery possible.

The population for this study consisted of all the doctors and nurses working in government owned health delivery facilities in Ebonyi State. According to the Health information and Management System Department, Ministry of health Abakaliki, Ebonyi State (2016), there are1,922 doctors and nurses.

A total of 192 respondents were selected to constitute the sample size. The sample size was determined using Nwanna (2007), which states that if target population is in few hundreds, we make use of forty percent (40%) of the total population; in many hundreds we use (20%), if in few thousands we use 10% and 5% in many thousands. Therefore 10% of the total population of 1922 was selected for the study. Below is the description of how the sample size was obtained.

Using Nwanna's formula

$$\text{of } 10 \text{ x } \frac{1922}{100} = 192$$

Therefore the sample size is 192

The multi-stage sampling technique was adopted for the study on Attitude and Practice of healthcare workers towards Infection Prevention Strategies in public Hospitals in Ebonyi State.

In the first stage Ebonyi state was subdivided into three natural clusters which are Ebonyi North, Ebonyi South and Ebonyi Central senatorial district

In the second stage, simple random sampling without replacement was used to select two (2) local government areas from a pool of all local government areas that make up the different senatorial district in Ebonyi state.

In the third stage, simple random sampling without replacement were used to select four (4) health care facilities from each local government area selected, leading to the selection of twenty four (24) health care facilities.

In the final stage simple random sampling was used to select 32 health care workers at the ratio1:7, (4 doctors to 28 nurses) from each local government selected ensuring that local government that had Tertiary health facilities are selected before randomly sampling other health care facilities in area. This process lead to the selection of 192 health care workers for the study.

The instrument used for data collection was a structured questionnaire entitled "Attitude and practice of healthcare workers towards infection prevention strategies questionnaire" (APHWTIPSQ). The questionnaire comprises five sections A to E with 28 items. Section A had three (3) items which seek to determine the personal characteristics of the respondents; section B has eight (8) items which would elicit responses from healthcare workers on the attitude of healthcare workers towards standard precaution in infection prevention strategies. Section C has five (5) items which would elicit response from the respondents on attitude of healthcare workers towards transmission based precautions of infection prevention strategies; Section D has eight (8) items which would elicit response from the respondents on practice of healthcare workers towards standard precaution of infection prevention strategies. Section E has five (5) items which were used to elicit the opinion of the respondents on practice of healthcare workers towards transmission base precautions of infection prevention strategies in Ebonyi state. The instrument was designed on a 4-point scale with Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The 4-point scale instrument will be scored directly using 1, 2, 3 and 4. See appendix A & B.

One hundred and ninety two (192) copies of the questionnaire were distributed to the respondents in the selected health care facilities (see sampling technique) and all returned. A self-completion questionnaire was administered by the researcher and two research assistants who are nurses in the designated areas under study. An Orientation program was organized for the research assistants, to get them acquainted with the modalities for administering the instrument. Respondents were briefed on the purpose of the study and oral consent was also obtained from them. All respondents were assured of confidentiality and anonymity. They were asked to put the completed questionnaire forms in the envelope provided and were collected on the spot.

Data was entered in computer using Statistical Package for Social Sciences (SPSS) software for windows version 20.0 (SPSS, Inc, Chicago, IL). Mean and standard deviations were used to answer the research questions. A 4-point scale was used to determine the criterion mean, each category will be assigned a numerical value, for example, 4= Strongly agreed, 3= Agreed, 2= Disagree and 1= Strongly disagree. To obtain the criterion mean the numerical values were summed up and divided by the

total number of units, thus 4+3+2+1=10/4= 2.50. Therefore any mean score equal to or greater than 2.50 will be accepted while any mean score less than 2.50 will be considered unaccepted.

The null hypotheses 1 – 8 were tested using t-test to determine the rejection or not rejection of the null hypotheses. The null hypotheses were tested at 0.05 level of significance. In respect of the hypotheses, if the calculated t-value is equal or greater than the critical value, the null hypothesis will be rejected.

The findings of this study on Attitude and Practice of health care workers towards infection prevention strategies in public hospitals in Ebonyi State are presented in the tables below according to the research questions that guided the study.

Table 1: Mean and Standard deviation of Attitudes of healthcare workers towards standard precaution of infection prevention strategies. (N=192)

SN	ITEMS	N	SUM	$\bar{x}$	SD	DECISION
1	Healthcare workers feel that hand washing before and after work each procedure is good	192	594	3.09	0.78	Positive
2	Healthcare workers like using gloves for protection from infectious disease.	192	560	2.92	0.92	Positive
3	Healthcare workers like the use of personal protective equipment, such as eye protection and aprons.	192	580	3.02	0.89	Positive
4	Healthcare workers believe that cleaning non-disposable equipment helps to prevent infection.	192	575	2.99	0.73	Positive
5	Healthcare workers feel that the use of gown and overalls is good for protection.	192	531	2.77	1.18	Positive
6	Healthcare workers like to disinfect non-disposable equipment	192	562	2.93	0.67	Positive
7	Healthcare workers believe that sterilizing non-disposable equipment is good.	192	494	2.57	0.93	Positive
8	Healthcare workers prefer safe collection and disposal of waste for prevention of infection.	192	438	3.32	0.99	Positive
	GRAND MEAN			**2.92**	**0.95**	Positive

Data report in table 1 showed a grand mean response of (= 2.92) and standard deviation of 0.95 respectively. This means that the attitude of healthcare workers towards the standard precaution of infection prevention strategies is positive since

the grand mean is above the criterion mean (= 2.5) set for the study. However, Healthcare workers feel that hand washing before and after each procedure are good with mean and standard deviations of 3.09. The table shows that healthcare workers like using gloves for protection from infectious disease mean (= 2.92). It also showed that healthcare workers like the use of personal protective equipment, such as eye protection and aprons with its mean (= 3.02). The table shows that healthcare workers believe that cleaning non-disposable equipment helps to prevent infection with its mean (= 2.99). The table also showed that Healthcare workers feel that the use of gown and overalls is good for protection mean (= 2.77). It showed that Healthcare workers like to disinfect non-disposable equipment with its mean (= 2.93). It further showed that Healthcare workers believe that sterilizing non-disposable equipment is good (= 2.57). The table also showed that Healthcare workers prefer safe collection and disposal of waste for prevention of infection (= 3.32).

Table 2: **Mean and Standard deviation on Attitudes of healthcare workers towards the transmission base precaution of infection prevention strategies. (N=192)**

SN	ITEMS	N	SUM		SD	DECISION
9	Healthcare workers believe that contact transmission involves skin-to-skin contact	192	603	3.14	1.30	Positive
10	Healthcare workers feel that Droplets transmission are generated from the source person during coughing, sneezing, or talking	192	518	2.70	0.72	Positive
11	Healthcare workers believe that airborne transmission occurs by dissemination of airborne droplet.	192	552	2.88	1.21	Positive
12	Healthcare workers feel that Droplets transmission are generated during the performance of certain procedures	192	522	2.72	1.36	Positive
13	Healthcare workers feel that airborne transmission occurs by dust particles containing the infectious agent	192	549	2.86	0.94	Positive
	GRAND MEAN			**2.82**	**1.10**	**Positive**

In table 2, the data showed the grand mean of (= 2.82) and standard deviation of 1.10. This means that there is positive attitude of healthcare workers towards the transmission based precaution of infection prevention strategies since the grand

mean is above the criterion mean (= 2.5) set for the study. However, Healthcare workers believe that contact transmission involves skin-to-skin contact with its mean (= 3.14). The table shows that healthcare workers feel that Droplets transmission are generated from the source person during coughing, sneezing, or talking with its mean at (= 2.70). The table also showed that healthcare workers feel that airborne transmission occurs by dissemination of airborne droplet with its mean (= 2.88). The table further reviled that Healthcare workers feel that Droplets transmission are generated during the performance of certain procedures with its mean at (= 2.72). The table also showed that Healthcare workers know that airborne transmission occurs by dust particles containing the infectious agent with its mean (= 2.86).

Table 3: **Mean and Standard deviation on practices of healthcare workers towards standard precaution of infection prevention strategies. (N=192**)

SN	ITEMS	N	SUM		SD	DECISION
14	Healthcare workers wash their hands before and after work each procedure	192	509	2.65	1.02	Agree
15	Healthcare workers use gloves for infection prevention	192	570	2.97	1.00	Agree
16	Healthcare workers use personal protective equipment, such as eye protection and aprons.	192	680	3.54	0.50	Agree
17	Healthcare workers clean non-disposable equipment before use.	192	556	2.90	0.88	Agree
18	Healthcare workers use gown and overalls for protection.	192	609	3.17	1.22	Agree
19	Healthcare workers disinfect non-disposable equipment	192	680	3.54	0.50	Agree
20	Healthcare workers sterilize non-disposable equipment	192	586	3.05	0.92	Agree
21	Healthcare workers collect and dispose waste properly for prevention of infection.	192	571	2.26	1.21	Disagree
	GRAND MEAN			**3.01**	**0.90**	**Agree**

Data report in table 3 showed a grand mean (= 3.01) and standard deviation of 0.90 respectively. This means that the practice of healthcare workers towards standard precaution of infection prevention strategies is adequate since the grand mean is above the criterion mean (= 2.5) set for the study. However, Healthcare workers wash their hands before and after each procedure with mean and standard deviation of (= 2.65) and 1.02 respectively. The table showed that Healthcare workers use gloves for protection from infectious disease (= 2.97). It also showed that Healthcare workers use personal protective equipment, such as eye protection and aprons (= 3.54). The table showed that Healthcare workers by cleaning non-

disposable equipment helps to prevent infection (= 2.90). The table also showed that Healthcare workers use gown and overalls for protection (= 3.17.) It showed that Healthcare workers disinfect non-disposable equipment (= 3.54). It further showed that Healthcare workers sterilize non-disposable equipment (= 3.05). The table also showed that Healthcare workers do not collect and dispose waste for prevention of infection (= 2.26).

Table 4: **Summary of t-test Statistic Verifying the Difference in healthcare workers response on their attitude towards standard precautions of infection prevention strategies Based on Gender.**

Gender	N	Mean	SD	Df	t-cal	t-crit	P	Decision
Male	70	3.10	0.87					
				190	1.72	1.96	.05	Do not reject
Female	122	2.83	0.99					

Results in table 4 show that there is no significant difference between male and female healthcare workers towards their attitude in standard precautions of infection prevention strategies. The result shows that the calculated t-value is less than the t-critical table values (t-cal = 1.72 < 1.96) at .05 level of significance. Therefore, the null hypothesis was not rejected. Based on the above, healthcare workers' attitude towards standard precautions of infection prevention strategies is not based on gender.

Table 5: **Summary of t-test Statistic Verifying the Difference in healthcare workers response on their attitude towards transmission base precautions of infection prevention strategies Based on Gender**.

Gender	N	Mean	SD	Df	t-cal	t-crit	P	Decision
Male	70	3.03	0.94					
				190	1.57	1.96	.05	Do not reject
Female	122	2.76	1.16					

Results in table 5 show that there is no significant differences between male and female healthcare workers towards their attitude towards transmission base precautions of infection prevention strategies. The result shows that the calculated t-value is less than the t-critical table values (t-cal = 1.57 < 1.96) at .05 level of significance. Therefore, the null hypothesis was not rejected. Based on the above, healthcare workers' attitude towards transmission base precautions of infection prevention strategies is not dependent on gender.

Table 6: **Summary of t-test Statistic Verifying the Difference in healthcare workers response on their practice on standard precautions of infection prevention strategies Based on Gender.**

Gender	N	Mean	SD	Df	t-cal	t-crit	P	Decision
Male	70	3.26	0.78					
				190	1.16	1.96	.05	Do not reject
Female	122	2.86	0.92					

Results in table 6 show that there is no significant differences between male and female healthcare workers towards their practice of standard precautions of infection prevention strategies. The result shows that the calculated t-value is less than the t-critical table values (t-cal = 1.16 < 1.96) at .05 level of significance. Therefore, the null hypothesis was not rejected. Based on the above, healthcare workers' practice of standard precautions of infection prevention strategies is not dependent on gender.

From the analysis of the data collected the major findings that emerged are:

1. The attitude of healthcare workers towards the standard precaution in infection prevention strategies is positive since the grand mean (= 2.92) is above the mean criterion set for the study.
2. The attitude of healthcare workers towards the transmission based precaution of infection prevention strategies is positive since the grand mean (= 2.82) is above the mean criterion set for the study.

3. The practice of healthcare workers towards standard precaution in infection prevention strategies is adequate since the grand mean (= 3.01) is above the criterion mean set for the study.

The findings of this study are discussed according to the research questions and hypotheses as it relates to the research question that guided the study.

What is the attitude of healthcare workers towards the standard precautions of infection prevention strategies in public hospitals in Ebonyi state?

The finding on this revealed a grand mean response of (= 2.92) and standard deviation of 0.95 respectively. This means that the attitude of healthcare workers towards the standard precaution of infection prevention strategies is positive since the grand mean is above the criterion mean (= 2.5) set for the study. The findings of this study reveal that, the attitude of healthcare workers towards the standard precautions of infection prevention strategies in hospitals in Ebonyi state is positive. This is in line with what Ocran and Tagoe (2014) who showed in their study that most HCW were well informed about HAIs. Ninety-seven (46.2%) responding patient always washed their hands while 65 (31%) and 48 (22.9%) respectively sometimes or never washed their hands within or after leaving the hospital. Out of those who

washed their hands, 64 (39.5%) always washed with soap while 46 (28.4%) do sometimes. Therefore, healthcare workers believe that hand washing before and after work each procedure is good, healthcare workers like using gloves for protection from infectious disease, they like the use of personal protective equipment, such as eye protection and aprons, healthcare workers believe that cleaning non-disposable equipment helps to prevent infection, Healthcare workers feel that the use of gown and overalls is good for protection, Healthcare workers like to disinfect non-disposable equipment, Healthcare workers believe that sterilizing non-disposable equipment is good, Healthcare workers prefer safe collection and disposal of waste for prevention of infection.

Attitude of healthcare workers towards the transmission base precaution of infection prevention strategies

The finding on attitude of healthcare workers towards the transmission base precaution of infection prevention strategies is positive, it reviled a grand mean of (= 2.82) and standard deviation of 1.10. This means that there is positive attitude of healthcare workers towards the transmission based precaution of infection prevention strategies since the grand mean is above the criterion mean (= 2.5) set for the study. It was noted in this study that the attitude of healthcare workers towards the transmission base precaution of infection prevention strategies is positive. This is in line with a study carried out by Sessa, Di Giuseppe, Albano and Angelillo (2011), who assessed the level of knowledge, attitudes, and practice towards disinfection procedures among nurses in Italian hospitals. Attitudes towards the utility of guidelines/protocols for disinfection procedures showed a mean score of 9.1. The results of the linear regression model indicated a more positive attitude in female nurses, in those with a lower number of years of activity, and in those needing additional information about disinfection procedures.

Data on this showed that Gender has no influence on the attitude of healthcare worker towards transmission base precautions of infection prevention strategies. According to the data, the null hypothesis was not rejected. Therefore, gender exerts no significant influence on the attitude of healthcare worker towards transmission base precautions of infection prevention strategies. This is in agreement with what Francis (2007) reported that both men and women tend to choose positive attitude towards hand washing.

Conclusion

Based on the findings of the study, the following conclusions were made

- Healthcare workers in Ebonyi state showed positive attitude towards standard precautions of infection prevention strategies.
- Healthcare workers in Ebonyi state showed positive attitude towards transmission base precautions of infection prevention strategies.

- There is acceptable practice of standard precautions of infection prevention strategies by healthcare workers in Ebonyi State.
- There is also good practice of standard precautions of infection prevention strategies by healthcare workers in Ebonyi State.

Educational implications

The findings of this study have the following educational implications

1. The findings on attitudes of healthcare workers towards standard precaution and transmission base precaution strategies showed that health workers are knowledgeable and are ready to imbibe the strategies available in order to maintain good health.
2. In practice, there are no enabling environments in place to take care of the need of healthcare workers in order to practice these strategies adequately in all the healthcare facilities available.
3. If nothing serious is done by the government, qualities and quantity of healthcare workers will be affected thereby having negative effect on the Nigerian economy. This is because a healthy nation is a wealthy nation.

Recommendations

The following recommendations were made, based on the findings of the study and conclusions drawn.

1. The Federal and State ministries of health should collaborate with the World Health Organisation to provide an enabling environment for healthcare workers to practice these strategies. They should also assess the quality of practice from time to time to enable the healthcare workers maintain good hygiene in healthcare facilities.
2. Hospital management should organise workshops/seminars to educate healthcare workers on the need to protect themselves during and after each procedure in order to improve their attitude toward precautionary measures.
3. Hospital management and the government should ensure that basic and adequate materials and equipment's needed by health workers to protect themselves are provided
4. Healthcare workers should make extra effort to maintain good hygiene and should be precautious while using any equipment in healthcare facilities.
5. There should be adequate provision of standard precautionary materials for health care workers to improve their practice.

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