ORIGINAL ARTICLE

Knowledge and Compliance with Standard Precaution Among Healthcare Workers in A South-East Nigerian Tertiary Hospital

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ABSTRACT

Background: Adherence to standard precautions (SP) is critical to reducing the burden of nosocomial infections.
Objective: We assessed the knowledge and practice of SP among healthcare workers (HCWs).
Methodology: A cross-sectional study was conducted among HCWs in Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi Anambra State, Nigeria using self-administered questionnaire and key informant interview.
Results: Mean age and employment duration of subjects were 33.4±11.9 and 6.0 ± 6.7 years, respectively. Majority of the 341 HCWs had heard about SP (82.1%) and agreed that it should be applied to all patient care (78.0%). Only 45.7% of them correctly cited ≥2 components of SP. Two-third of participants reported that SP was poorly practiced in their unit mainly due to inadequate supply of materials (63.1%), inadequate staff training/retraining (62.2%), inadequate support by management (51.4%) and unavailable standard operating procedures (SOPs) on SP (37.8%). Compliance with SP and specifically, personal protective equipment (PPE) use were 65.1% and 76.2%, respectively. Profession (p=0.023), awareness about SP (p<0.001), SOP display in prominent places (p<0.001) and regular supply of running water (p<0.001) were significantly associated with SP compliance.
Key informant interview revealed lack of written SP policies or its communication to HCWs, lack of training/retraining of HCWs and lack of materials required for SP practice.
Conclusion: Knowledge of basic concept and practice of SP was not satisfactory among HCWs. Major barriers to SP were lack of materials, training and active support by hospital management. Awareness, SOP display in prominent places and regular supply of running water positively influenced SP compliance.
Having written policies and communicating such to all HCWs, consistent supply of necessary materials, intensified training, and regular supervision are recommended

Keywords: *Universal precautions, Nosocomial infections, Tertiary hospitals, Health Personnel, Nigeria*

INTRODUCTION

The control of healthcare associated infections (HAIs) is a significant public health concern globally.[1] Every day, HCWs face the risk of acquiring various infections, some of which are life-threatening, and transmitting same infections to their families. More so, HAIs worsen the outcomes of patients and their caregivers and increases the costs of treatment. Healthcare associated infections often occur through exposure to contaminated blood and other body fluids, secretions, excretions, skin, and inanimate objects.[1,2] Both HCWs and patients can acquire deadly infections such as Human Immuno-deficiency Virus (HIV), Lassa fever, hepatitis B and C viruses (HBV and HCV), and tuberculosis in the hospital. In Italy, 20% of healthcare professionals became infected in the course of the global coronavirus pandemic.[3]

Fortunately, the transmission of HAIs is highly preventable by the application of simple measures.[1,2] Therefore, SP was designed as a set of simple, cost-effective control measures to prevent transmission of HAIs, and is recommended as the minimum standard in the care of all patients at all levels of healthcare globally.[2,4] This involves strategies to limit contact with potential sources of HAIs and include personal/hand hygiene; use of personal protective equipment; proper handling, cleaning and disinfection of patient-care equipment; safe injection and surgical practices; proper handling and disposal of sharp instruments and human waste and respiratory hygiene/cough etiquette.[2] Despite the proven effectiveness of SP against HAIs, the burden of HAIs remain unacceptably high.

Currently, HAIs constitute one of the most common adverse effects of health care delivery.[2] Up to 7% and 10% of patients in developed and developing countries, respectively, acquire at least one HAI in the course of their treatment.[2] The West African Ebola outbreak and spread of other deadly viruses such as Lassa fever and the current coronavirus pandemic indicate how weak or non-existent the infection prevention and control (IPC) programmes in hospitals can jeopardize global health security. During such outbreaks, health care facilities often become dangerous places for intensification of transmission among HCWs, patients and communities rather than disease control.[5]

Reports from previous studies indicate poor compliance with SP among HCWs.[6-12]

Although SP has been the subject of many previous researches, the issue of protecting patients and HCWs against HAIs continues to attract considerable critical attention globally. This study was conducted to determine the knowledge, practice and factors that influence the practice of SP among HCWs in Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi Anambra State, Nigeria. This was the first of a three-phase research involving baseline assessment, intervention and post-intervention assessment. Hopefully, findings will provide evidence to guide hospital managers and relevant stakeholders in adopting strategies that will improve the prevention and control of HAIs through SP in healthcare settings.

METHODOLOGY

This cross-sectional study was carried out among HCWs at NAUTH, Nnewi in October, 2018. NAUTH is the only federal tertiary hospital in Anambra State, serves as a referral center for the entire Anambra and neighboring states, has a full complement of all clinical departments and service units namely: adult and pediatric emergency rooms, surgery, medicine, pediatrics, obstetrics and gynecology, pathology and radiology departments, HIV / AIDS and directly observed treatment, short course (DOTS) centre, intensive care unit, nursing services, pharmacy, medical records, and other non-clinical departments. It provides specialist inpatient and outpatient services. On average, there were about 1600 HCWs in NAUTH, Nnewi during the study period.

Before the commencement of the study, ethical approval was obtained from the NAUTH Ethics Committee.

Subjects consisted of various cadres of NAUTH HCWs, including doctors, pharmacists, nurses, medical laboratory scientists, radiographers, physiotherapists, dieticians as well as non-clinical staff such as health records officers and cleaners. Eligibility criteria were all HCWs who had worked in NAUTH Nnewi for up to 6 months prior to the study, comes in direct contact with patients or the bye-products of healthcare in the course of their work, and gave informed consent for the study.

The list of HCWs as obtained from the Information and Communication Technology (ICT) department served as the sampling frame for the study. The subjects were proportionately recruited using a stratified random sampling technique, which was based on the relative proportion of each group of healthcare worker in the hospital. Nurses, doctors, medical laboratory scientists, pharmacists, radiographers, physiotherapists, health records officers, dieticians, cleaners and clerical officers were recruited in the ratio of 4.4:4:2.7:1.3:1:1:1:0.4:0.5:0.5, respectively. Data was collected from subjects using a semi-structured, self-administered questionnaire.

Another key aspect of our study was interview of individuals who are believed to have in-depth knowledge on the provisions made to ensure optimal practice of SP in the facility. Outcome is believed to be instrumental in understanding the barriers to practice of SP among HCWs. Ten randomly selected key informants were interviewed using a structured questionnaire. Key informants were drawn from ward/clinic matrons who had reached the cadre of Chief Nursing Officer (CNO) or Assistant Director of Nursing services (ADNS) and had worked in the facility for at least 15 years. The questionnaire consisted of 40 questions administered over a period of one hour by face to face interview. The domains covered in the interview were policies and trainings on SP, supply of required materials and monitoring SP Practices. Key informants were required to answer yes or no to the questions.

Data was analyzed using SPSS (IBM, Chicago IL, USA) software version 21. The association between categorical variables were compared using chi-square test. Where assumptions for chi-square was violated, fisher's exact test was used.

RESULTS

Socio-Demographic Data

A total of 341 HCWs were studied. the age of the participants ranged from 20-59 years with the mean age of 33.4 ± 11.9years while duration of employment ranged from 6 months to 35 years. The male: female ratio was 0.6:1. As shown in Table 1, about half of the subjects were married. Medical doctors, nurses and medical lab scientists constituted about 2/3rd of the subjects.

Table 1. Gender and profession of the participants

Characteristic	Freq	%
Sex		
Male	123	36.1
Female	211	61.9
No response	7	2.1
Profession		
Medical doctor	80	23.5
Nurses	88	25.8
Pharmacists	26	7.6
Medical lab scientist	53	15.5
Radiographers	20	5.9
Physiotherapists	18	5.3
Health record officers	21	6.2
Dieticians	8	2.3
Cleaners	9	2.6
Clerical officers	10	2.9
Others	8	2.3
Total	341	100.0

Knowledge and Perception About SP

Majority, two hundred and eighty (82.1%) respondents were aware of the term SP as shown

Table 2. Awareness of the term SP among different group of HCWs

Profession	Have you ever heard of the term SP?			Total
	Yes	No	No response	
Medical doctors	74(92.5)	5 (6.3)	1(1.3)	80
Nurses	78 (88.6)	2 (2.3)	8 (9.1)	88
Pharmacists	15 (57.7)	9 (34.6)	2(7.7)	26
Medical lab scientists	45 (84.9)	7 (13.2)	1(1.9)	53
Radiographers	15 (75.0)	5 (25.0)	0 (0.0)	20
Physiotherapists	14 (77.8)	3 (16.7)	1 (5.5)	18
Health record officers	15 (71.4)	5 (23.8)	1 (4.8)	21
Dieticians	6 (75.0)	2 (25.0)	0 (0.0)	8
Cleaners	6 (66.7)	3 (33.30	0 (0.0)	9
Ward/clinic attendants	8 (80.0)	2 (20.0)	0 (0.0)	10
Others	4 (50.0)	4 (50.0)	0(0.0)	8
Total	**280 (82.1)**	**47(13.8)**	**14(4.1)**	**341**

in Tables 2 and 3. Awareness of the term SP varied among different HCWs with the medical doctors (92.5%), nurses (88.6%), medical laboratory scientists (84.9%) and physiotherapists (77.8%) leading, while the pharmacists (57.7%) and others including ambulance drivers and security men (50.0%) were least aware of the term SP. The commonest cited sources of information were workshops/conferences (66/280, 23.6%), hospital sensitization (89/280, 31.8%) and classroom lectures (100/280, 35.7%).

Less than half (280/341, 45.7%) of respondents knew at least two correct components of SP, and the commonest cited components were hand hygiene (124/175, 70.9%) and use of personal protective equipment (PPE) (148/175, 84.6%). A majority of the respondents (286/341, 83.9%) have heard of the term PPE, out of which 86.7% (248/286) were aware of at least two types of PPE.

Less than half (161/341, 47.2%) of respondents reported that SOPs on SP were displayed at prominent places in their unit.

As shown in Table 4, majority of the participants responded that the practice of SP was necessary in hospitals (309/341, 90.6%), and that it is needed in the care of all patients (266/341, 78%). Only 38.1% (130/341) responded that SP was adequately practiced in their unit. The most common reasons cited by respondents for inadequate practice of SP in their unit included lack of: materials for the practice of SP (70/229, 63.1%), support by hospital management (57/111, 51.7%), training of staff on SP (69/111, 55.0%), and SOPs on SP (42/111, 37.8%)

Compliance with SP

As shown in Table 5, regular compliance with SP recommendations varied among the different cadre of HCWs. The highest rate of compliance was recorded among the cleaners (9/9, 100.0%), followed by the radiographers (17/20, 85.0%), nurses (62/88, 70.4%), medical laboratory scientists (37/53, 69.8%), medical doctors (50/80, 62.5%), physiotherapists (11/18, 61.1%), while the dieticians has the least rate of compliance (2/8, 25.0%).

As shown in Tables 5 factors significantly associated with compliance with SP included having heard about SP, knowing that SP can be applied in all patient care and having SOP on SP displayed in prominent places in the unit.
Compliance with SP was significantly associated with regular supply of running water in the unit.

Table 3. Knowledge of SP among the HCWs

Characteristic	Freq	%
Awareness of the term SP (n=341)		
Yes	280	82.1
No	47	13.8
Don't know	14	4.1
Source of information (n=280, multiple response)		
Workshops/conferences/seminars	66	23.6
Hospital sensitization activities	89	31.8
Social media	33	11.8
Mass media	40	14.3
Classroom lectures	100	35.7
Journals	38	13.6
Awareness of SP components (n=280)		
Knows one correct component	47	16.8
Knows two correct components	70	25.0
Knows at least three correct components	58	20.7
No response	105	37.5
Cited components of SP (n=175, multiple response)		
Hand hygiene	124	70.9
Use of PPE	148	84.6
Safe environment	56	32.0
Respiratory hygiene/cough etiquette	7	4.0
Safe use of work instruments	31	17.7
Awareness of the term PPE (n=341)		
Yes	286	83.9
No	29	8.5
No response	26	7.6
Awareness of types of PPE (n=286)		
No correct response	29	10.1
One correct responses	7	2.4
Two correct responses	32	11.2
Three or more correct responses	216	75.5
Is SOPs on SP displayed in prominent places in your unit? (n=341)		
Yes	161	47.2
No	74	21.7
Don't know	106	31.1

Table 4. Perception regarding SP for infection control

Characteristic	Freq	%
Is practice of SP for infection control necessary in hospital? (n=341)		
Yes	309	90.6
No	10	2.9
Don't Know	8	2.3
No response	14	4.1
Is SP applicable to all patient care? (n=341)		
Yes	266	78.0
No	15	4.4
Don't know	31	9.1
No response	29	8.5
Is SP adequately practiced in your unit? (n=341)		
Yes	130	38.1
No	88	25.3
Don't know	123	36.1
What factors are responsible for inadequate practice of SP in your unit? (n=111, multiple response)		
Lack of adequate support by hospital management	57	51.4
Lack of training on SP	69	55.0
Lack of SP materials	70	63.1
Lack of SOPs for SP	42	37.8
No hospital policy/guideline on SP	25	22.5
Poor water supply		
poor electricity supply	25	22.5
No incentive	27	24.3
Forgetfulness	15	13.5
Lack of time/emergency situations	9	8.1
	11	9.9

Key Informant Interview (KII) Result

As shown in Figure 1, responses on written policies imply that apart from policies and procedures on evaluation of adherence to SP and sterilization of reusable instrument, written policies were either not in existence or HCWs were not aware of them.

From responses in Figure 2, it can be inferred that prior to the study, participants were not adequately trained on SP apart from the need to report transmissible infections they may be

suffering from or when new tasks that increase their exposure to HAIs were assigned to them.

Regarding supply of materials needed from SP, responses show that apart from materials needed for hand hygiene, there was insufficient supply of other materials needed by HCWs such as appropriate PPEs as shown in Figure 3. Figure 3 showed that the hospital has a good practice of monitoring wards for cleanliness, screening staff and patients for respiratory infections and discarding sharps that may potentially cause needle stick injuries. However, there seemed to be inadequate measures to control spread of respiratory infections such as provision of materials for hand hygiene, facemask, non-touch tissue receptacle, enough space in waiting area for patients and training on cough etiquette.

Table 5. Factors that affect compliance with SP

Characteristics	Do you always comply with SP?				
	Yes	No	Don't know	Total	p-value
Have you ever heard of SP? (n=316)					
Yes	198(72.8)	54(19.8)	20(7.4)	272	<0.001*
No	23(52.3)	5(11.4)	16(36.4)	44	
Can SP be applied to all patient type?					
Yes	193(74.5)	20(17.8)	20(7.7)	259	<0.001+
No	8(53.3)	4(26.7)	3(20.0)	15	
Don't know	13(43.3)	4(13.3)	13(43.3)	30	
Is SOP for SP displayed in prominent places in your unit? (n=315)					
Yes	133(83.7)	19(11.9)	7(4.4)	159	<0.001*
No	41(56.9)	25(34.7)	6(8.3)	72	
Don't know	43(51.2)	18(21.4)	23(27.4)	84	
Is there regular supply of running water in your unit? (n=322)					
Yes	136(79.5)	19(11.1)	16 (19.4)	171	<0.001*
No	84(58.7)	44(30.8)	15(10.5)	143	
Don't know	2(25.0)	0(0.0)	6(75.0)	8	
Profession					
Medical Doctor	50(62.5)	21(26.3)	9(11.3)	80	0.023*
Nurses	62(70.4)	10(11.4)	9(10.2)	88	
Pharmacists	14(53.8)	5(19.2)	7(26.9)	26	
Medical Lab Scientist	37(69.8)	8(15.1)	8(15.1)	53	
Radiographers	17(85.0)	1(5.0)	2(10.0)	20	
Physiotherapists	11(61.1)	4(22.2)	3(16.7)	18	
Medical Record Officers	12(57.1)	7(33.3)	2(9.5)	21	
Dieticians	2(25.0)	3(37.5)	3(37.5)	8	
Cleaners	9(100.0)	0(0.0)	0(0.0)	9	
Ward/clinic attendants	4(40.0)	3(30.0)	3(30.0)	10	
Others	4(50.0)	1(12.5)	3(37.5)	8	

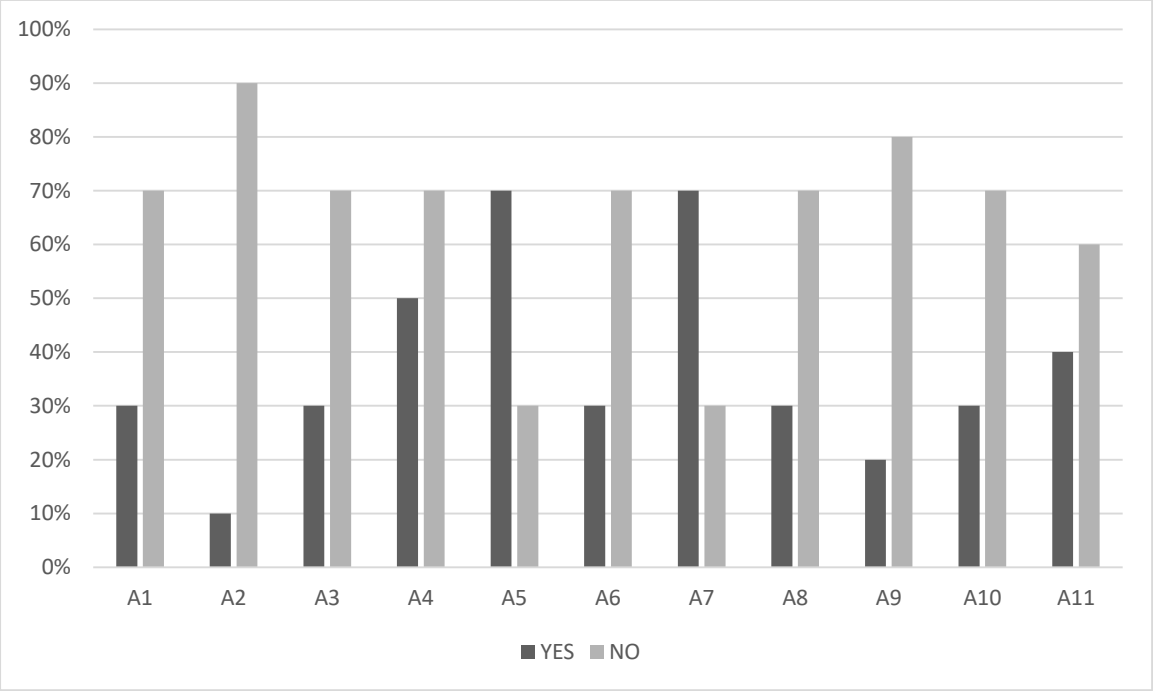
*Statistically significant

KII Results

Policies Domain

Code	Questions
AI	Does the hospital have written evidence based infection control policies and procedures?
A2	Are infection control policies reassessed and updated at least once a year?
A3	Are there well defined case notification policies for staff suffering from potentially transmissible diseases?
A4	Is there a work exclusion policy to encourage staff to report such illness (A3) without loss of salary, benefits or job status?
A5	Is there a written policy/procedure for routine monitoring and evaluation of adherence to SP?
A6	Is there a written policy/procedure to contain air-borne infections?
A7	Is there a written policy/procedure for proper sterilizing of reusable patient care instruments and devices?
A8	Is there a written policy/procedure for routine cleaning and disinfection of environmental surfaces in patient contact areas?
A9	Is there a written policy/procedures for maintaining water quality that meet environmental protection agency regulatory standard for drinking water?
A10	Is there a written policy for using sterile water as a coolant/irritant when performing surgical procedures?
A11	Is there a written procedures for decontamination of spills of blood or other body fluids

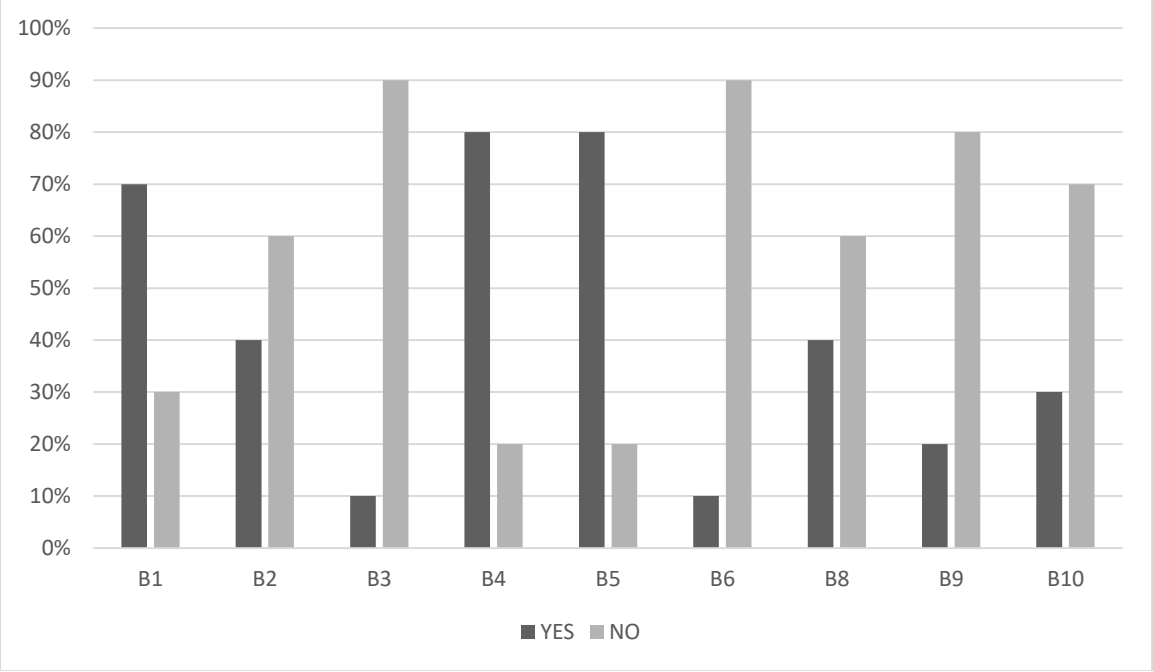
Figure 1. Responses to questions on policies domain



Training Domain

Code	Questions
BI	Are responsible staff members adequately trained for coordinating hospital infection control program?
B2	Do staff in your unit receive job/task-specific training on infection prevention policies and procedures upon first employment?
B3	Are staff retrained on SP at least once a year?
B4	Are staff retrained when new tasks/procedures affect the staff's occupational exposure?
B5	Are staff adequately trained on the importance of prompt reporting of transmissible illness to their supervisor?
B6	Are staff adequately trained on appropriate hand hygiene including handwashing, hand antisepsis and surgical hand antisepsis?
B7	Are staff routinely trained on the importance of controlling respiratory secretions in people who have signs/symptoms of respiratory infection?
B8	Are staffs responsible for processing reusable patient's care instruments and devices adequately trained on first appointment?
B9	Are such staff (B8) retrained annually or when new reusable instruments are procured?
B10	Do responsible staff receive job-specific training about environmental infection prevention and control management?

Figure 2. responses to questions on training domain

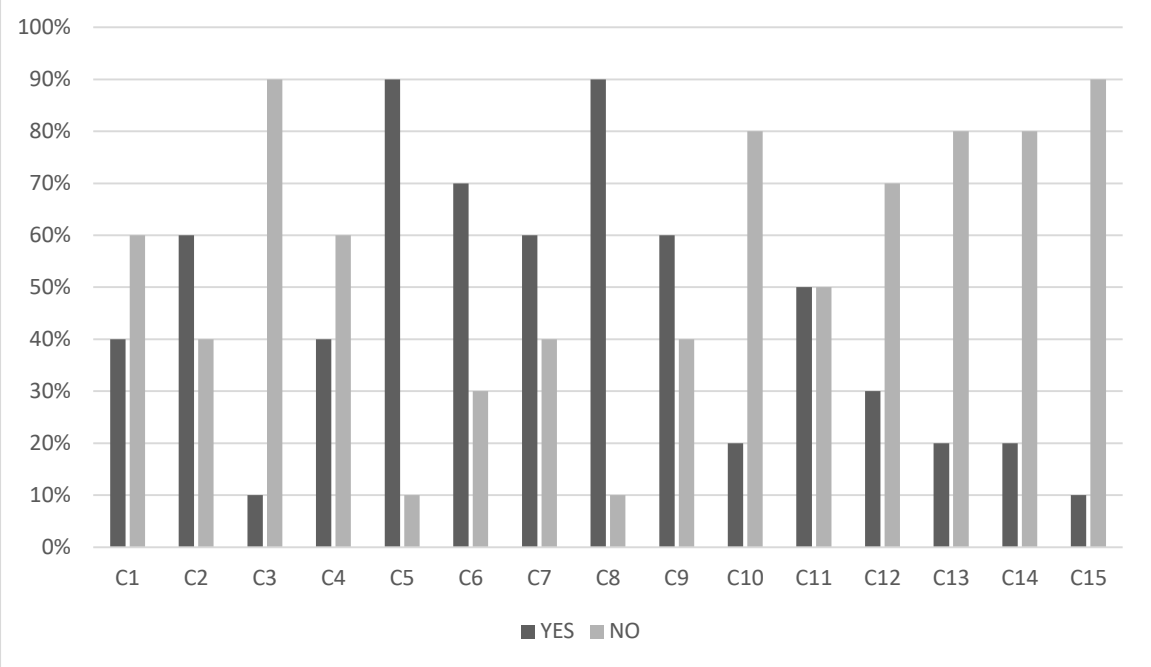


Supply, Monitoring And Respiratory Disease Surveillance

Code	Questions
CI	Are materials necessary for adherence to SP readily available in the hospital?
C2	Are supplies required for adherence to hand hygiene readily accessible to staff?
C3	Are there sufficient resources for patient to perform hand hygiene?
C4	Are sufficient and appropriate PPE readily available to staff
C5	Are adequate safety boxes for management of sharps placed at appropriate places within the hospital?

C6	Is there periodic monitoring and evaluation for cleaning, disinfection and use of surface barriers to ensure consistency and compliance?
C7	Is there an active surveillance for case detection of respiratory air-borne infections?
C8	Do staff receive baseline TB screening upon first employment regardless of risk classification?
C9	Does the hospital have a system for early detection and management of potentially infectious persons at initial point of patient encounter?
C10	Are there sufficient and active cough monitors in patient waiting and treatment areas?
C11	Are patients made to observe adequate coughing etiquette?
C12	Are patients provided with adequate resources for patient-level control of respiratory transmission of infection?
C13	Do patients have adequate supply of tissues and no-touch receptacles for disposal of tissues in wards and clinics?
C14	Are facemasks provided to coughing persons as soon as they enter the hospital?
C15	Is adequate space provided and persons with respiratory symptoms encouraged to sit as far as possible or stay in a separate waiting area?

Figure 3 . Responses to questions on supply, monitoring and respiratory disease surveillance domain



DISCUSSION

Our findings indicate that a fairly good proportion (82%) of the participants were aware of SP. However, it is surprising that the awareness was not 100% among HCWs who always come in direct contact with patients, patients' environment or specimen, considering the devastating risk of acquiring HAIs. In Enugu tertiary hospital, a higher proportion of HCWs (94%) were aware of SP.[13] However, the Enugu study focused on nurses and doctors, and the rate of awareness was comparable to 92.5% and 88.6%, respectively, recorded among doctors and nurses in the index study. The observed variation in awareness among different cadre of HCWs agrees with previous reports.[11,14,15] Awareness was higher among HCWs who were more likely to carry out procedures on patients or come in direct contact with patient's specimen (doctors, nurses and medical lab scientists).

Since a good proportion of the participants heard about SP from formal settings (classroom lectures and conferences), as also reported in

Enugu, there is need to fully integrate SP in the training curricula and continued professional development (CPD) of all HCWs irrespective of their profession.

Surprisingly, only a third of participants had heard about SP through hospital sensitization activities. Therefore, such sensitization activities should be intensified to ensure that all HCWs understand and adhere to infection control through SP. Efforts should also made to improve the utilization of mass and social media in promoting SP in healthcare settings.

The results show that the knowledge of the basic concept of SP was deficient among the HCWs. Only 45.7% of participants were able to cite at least two components of SP. However, majority were only able to recall hand hygiene and use of PPE as components of SP. Similar findings were documented in Ghana where only about 39.0% of participants knew about cough etiquettes and 40.0% knew about aseptic techniques.[8] It is worrisome that only 4% cited respiratory hygiene and none remembered injection safety or waste management as components of SP. This may imply that less attention is paid to those components and buttresses the need for training and retraining of HCWs on SP so as to enlighten them and reinforce their knowledge on all components of SP.

Majority of the participants believed that SP was necessary for protecting them and patients from HAIs but only a third felt that SP was adequately practiced in their units. The most common factor reported to militate against adequate SP practice was limited access to necessary materials. This is consistent with KII responses and reports from previous studies.

Previously, shortage of basic PPE such as eye shields, face mask, gloves, gowns and shoe covers has been widely reported as barriers to SP in several countries including Ghana, Ethiopia, Nepal, Egypt, China, Malaysia.[6.8.11,14,16-20] In a previous two-centre Nigerian tertiary hospital study, lack of resources together with lack of training and infection prevention committee was reported as the major hindrance to compliance with SP.[21] As the coronavirus pandemic currently accelerates, access to PPE for HCWs has been a key concern in many countries.[22] The above facts call for greater commitment on the part of healthcare managers to ensure adequate supply of basic materials required for SP practice such as appropriate PPE, running water, soap, disinfectants and regular electricity among others.

The benefits of training and retraining HCWs on SP cannot be overemphasized. Adequate training will equip HCWs with the correct information, modify HCWs behavior and positively influence compliance with SP recommendations.[8] Therefore, the finding that lack of training contributes to inadequate practice of SP was not unexpected and agrees with KII responses and previous studies' reports.[14,21] Drills should be organized at regular intervals to improve the proficiency of HCWs in the practice of SP especially when faced with increased workload or emergency which were reported by some participants in this study to negatively affect compliance with SP. It has been previously reported that HCWs consider practice of SP risky to patients. time consuming during emergencies and burdensome when applied in between patient care during heavy workload.[7]

Another factor identified to be inimical to the practice of SP was inadequate support by hospital management possibly through provision of an enabling environment such as conveniently located water taps, liquid soaps, hand sanitizers and dustbins, less workload and an air-conditioned environment to keep HCWs comfortable after donning PPEs. This is consistent with earlier report that HCWs are less likely to engage in safety behaviours when they perceive that hospital management did not actively prioritize safety by creating an enabling environment.[23] In Ghana, discomfort was reported as a major barrier to use of PPE.[8] Therefore, hospital managers should look

inwards to identify ways of creating an enabling environment thereby actively supporting practice of SP in their settings.

It is rather surprising that HCWs needed incentives, and sometimes forget to comply with practices that will protect them and their families from HAIs, and improve the quality of their work. This agrees with previous reports and calls for continued advocacy for attitudinal change towards compliance to SP by HCWs.[21] In addition, compliance to SP should be closely monitored, and rewards or punitive measures adopted where necessary.

Findings corroborate with previous reports that compliance with SP is a big challenge among HCWs.[6-12,21] Similar variation in compliance with SP among different professions have been previously reported.[14,15] In Enugu, doctors were more likely to wash hands than laboratory scientists who in turn were more likely to use PPEs more than medical doctors; while in China, nurses were more likely to wash hands than physicians.[14,15] The differences were attributed to varying job descriptions, exposure to HAIs, training and access to required materials.

Interestingly, all cleaners who participated in the study always complied with SP, compliance among the radiographers was also high. However, the possibility of overestimation cannot be ruled out as the questionnaire was self-administered. The reported rate of compliance among the cleaners, radiographers and dieticians may not reflect the true rates due to their limited number in the study. Hence, larger study population will be needed to confirm the actual compliance rates

The study also provided insight into the impact of display of SOP in prominent places on compliance with SP. In addition, responses to KII highlights the need for Hospital Infection Control Committees to have written policies/SOPs on infection control, ensure that such policies/SOPs are communicated to all staff and displayed in prominent places in the wards and clinics. Display of SP SOPs in prominent places, which was reported by less than half of the study participants, can address knowledge gaps, increase efficiency on SP practice and serve as regular reminder on proper practice of SP.

CONCLUSION:

Knowledge of the basic concept and practice of SP was low among HCWs, and these varied across different professions. Major barriers to SP were lack of: materials, training on SP and active support by hospital management. Compliance to SP was significantly associated with knowledge of SP, display of SOPs on SP in prominent places in the hospital and regular supply of running water.

Key informant interview showed that HCWs were neither aware of written policies on SP nor adequately trained/retrained on compliance to SP recommendations, and materials needed for SP were not adequately provided.

RECOMMENDATIONS

There is need for hospital managers and other stakeholders in health care sector to create an enabling environment and ensure consistent supply of materials needed for SP practice. Efforts should be intensified at training and retraining of HCWs on SP as well as regular supervision to ensure optimal compliance. Strategies such as inclusion in CPD and license renewal requirements should be put in place to enforce regular training of HCWs on SP. Infection control committees of hospitals should have written policies/SOPs addressing major aspects of SP, ensure that they are updated at intervals, communicated to all staff and displayed in prominent places in the hospital.

Intervention

Following analysis of data, the Infectious Disease Group of NAUTH Research Society in collaboration with the Quality Improvement Committee of the hospital conducted interventions through advocacy to the hospital management, conference organized by NAUTH management, and lectures/workshops

involving all cadres of HCWs in the hospital. Major thrust of intervention was on increased awareness, attitudinal change and advocacy for regular provision of necessary materials. Hopefully, this will be extended to other facilities in the state. Post-intervention assessments are to be undertaken in due course.

Limitations

Questionnaire was self-administered and there was no validation of reported compliance by direct observation. Therefore, responses were prone to overestimation of compliance and recall bias. Nevertheless, findings provide insight into barriers to practice of SP among different cadre of HCWs at risk of HAIs.

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