



An Evaluation of Hand Hygiene Practice by Health Care Personnel at a Tertiary Hospital in North Eastern Nigeria

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Authors' contributions:

This work was carried out in collaboration among all authors. Author IAI conceptualized and designed the study, collected the data, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author MGZ designed the study and wrote the protocol authors ABZ, IEI, LMM, HS and IUA contributed to the study design and collected the data. All authors read and approved the final manuscript.

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ABSTRACT

Background: Hand hygiene when done satisfactorily is one of the most effective ways of preventing hospital acquired infections. However elementary the process may seem, it is one that has been shown to significantly elude health care personnel (HCP). This study aimed at assessing the knowledge, attitude and practice of hand hygiene by HCP at the Federal Medical Centre (FMC) Azare, North-Eastern Nigeria.

Methods: The study was a cross sectional survey of HCP who make direct contact with patients at four randomly selected units of FMC Azare. Using the purposive sampling technique, a structured questionnaire was administered on the respondents. The collected data was analyzed using the statistical package for social sciences (SPSS) version 20.0. Presentation of data was done with tables, in proportions and percentages.

Results: Eighty-two (82) HCP were recruited into the study, 64 (78.0%) were males and 18 (22.0%) were females, giving a ratio of 3.6:1. Nurses made up 43.9%, health assistants 34.1% and doctors 22.0% of the total number. The respondents exhibited a good knowledge of hand hygiene

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(93.2%). Seventy- seven (93.9%) of the respondents showed a positive attitude while 6.1% had a negative attitude towards hand hygiene. All categories of respondents had good practice scores regarding hand hygiene.

Conclusion: The knowledge, attitude and practice of hand hygiene of HCP at FMC Azare is optimal. However, continuous training on infection prevention and control with emphasis on hand hygiene and other strategies is recommended to allow for improvement in compliance to the concept of standard precautions.

Keywords: Hand hygiene; knowledge; attitude; practice; healthcare personnel; Azare.

1. INTRODUCTION

Hand hygiene when done satisfactorily is one of the most effective ways of preventing hospital-acquired infections (HAI) [1,2]. However basic the process may appear to be, it is one that has been shown to significantly elude health care personnel (HCP) [3].

Recent Nigerian researchers have been inconsistent in their findings as to whether or not HCP have adequate knowledge, attitude and practice of hand hygiene [4,5]. Moreover, none of such studies have been conducted in this part of the country. A study of the knowledge, attitude and practice of hand hygiene at the Federal Medical Centre, Azare, would therefore be an attempt to fill the knowledge gaps in this regard.

This study was primarily aimed at assessing the knowledge, attitude and practice of hand hygiene by HCP at the Federal Medical Centre (FMC) Azare, North-Eastern Nigeria.

2. METHODOLOGY

2.1 Study Area

The present study was conducted at four randomly selected units of the Federal Medical Centre Azare, Bauchi state; the Main operating theatre (MOT), Special care baby unit (SCBU), Male surgical ward (MSW) and Female surgical ward (FSW). The centre is a tertiary facility which serves as a referral hospital for the populations of Bauchi, Yobe and Jigawa states of Northern Nigeria.

2.2 Study Design

The study was a cross sectional survey of health care personnel (i.e. doctors, nurses and health assistants) who make direct contact with patients at the theatres, SCBU, MSW and FSW.

2.3 Sampling/Sample Collection

Purposive sampling technique was employed for this study. All doctors, nurses and health

assistants who were present during the times of recruitment and gave consent were recruited. The study was conducted within a 4- week period from 1st to 31st October, 2019. During this period, four visits per week were made by the investigators to each of the SCBU, MOT, MSW, and FSW. All personnel (i.e. doctors, nurses and health assistants) present at the time of the visit were recruited after obtaining informed (written) consent.

The investigators then administer the structured questionnaire. The questionnaire contained questions on the unit the personnel was deployed, gender, and designation. It also included eleven questions on hand hygiene practices and ten questions on knowledge and attitude. Recruitments were done between 10:00 and 12:00 hours on designated days.

2.4 Data Analysis

The collected data was analyzed with the statistical package for social sciences (SPSS) version 20.0. Presentation of data was done with tables in proportions and percentages. Knowledge and practice were scored in percentages and graded. A score of 0-40% was considered low, >40 -≤69% was fair and >69% was good. Attitude was assessed with Likert items. Each Likert item was rated on a 1-4 response scale; where strongly agree=4, agree=3, disagree=2, and strongly disagree=1. The scores were graded into positive, or negative.

3. RESULTS

Eighty-two (82) HCP were recruited into the study, 64 (78%) were males and 18 (22%) were females giving a ratio of 3.6:1. Nurses constituted the largest number of respondents, making up 43.9% of the total number. In terms of units, the MOT accounted for 25 (30.5%) of the total HCP recruited into the study. Table 1 shows the general characteristics of the respondents.

Table 1. General characteristics of respondents

	Number of respondents (N = 82)	Percentage
Gender		
Male	64	78
Female	18	22
Designation		
Doctor	18	22
Nurse	36	43.9
Health assistant	28	34.1
Ward		
Male Surgical Ward	19	23.2
Female Surgical Ward	20	24.4
Main Operating Theatre	25	30.5
Special Care Baby Unit	18	22

Table 2 shows the knowledge and attitude of the respondents towards hand hygiene. The majority of respondents 93.2% displayed a good knowledge of hand hygiene while 6.8% had poor knowledge of hand hygiene. Seventy-seven (93.9%) of respondents showed a positive attitude while 6.1% had a negative attitude towards hand hygiene. The grading of the respondents on hand hygiene practices with regards to their responses to the questions is displayed on Table 3. It shows that all categories of respondents had good practice scores.

4. DISCUSSION

We set out to assess the level of knowledge, attitude and practice of hand hygiene by HCP in our facility. The findings from this study indicated that there was a high level of knowledge and attitude towards hand hygiene. The practice of hand hygiene was also shown to be at high levels by this study. Males constituted the majority of our respondents. However, nurses had a higher representation when compared to members of the other professions studied. This is at variance with findings from some other Nigerian studies [4,5]. The relatively higher number of male nurses recruited for our study may be the reason for this difference. However, a Saudi study also had a higher number of nurses as its respondents [6].

Our findings indicated a very high level of knowledge and attitude towards hand hygiene by HCP at FMC Azare. This is in agreement with findings from several studies conducted at other tertiary hospitals in Nigeria [4,5,7,8]. Studies conducted in Ethiopia, Saudi Arabia and

Germany have also reported similar findings [6,9,10]. The high levels of knowledge and attitude regarding hand hygiene in our study may be due to the fact that there have been heightened public relations campaigns on hand washing (sponsored by the disease prevention agencies in Nigeria) of late due to the recurrent epidemics of lassa fever the country has encountered in recent years. Also there was a comprehensive training on infection prevention and control organized in the facility about 10 months before this study was conducted.

All categories of HCP demonstrated optimal hand hygiene practices. This is in conformity with findings from other Nigerian studies [4,5,7,8]. Nevertheless, several other studies have demonstrated low levels of optimal hand hygiene practices [4,10-13]. Reasons adduced for this finding ranges from poor knowledge, lack of running water and/or lack of soap, lack of alcohol hand rub to over staffing. The basis for the very high levels of optimal hand hygiene practices in our study may be related to those outlined above. It is also likely that some HCP may have overestimated their level of compliance with standards and others may not have been honest in their responses.

This study has demonstrated for the first time in this part of Nigeria that HCP generally have optimal levels of knowledge, attitude and practice of hand hygiene at FMC Azare. However, a more comprehensive observational design would have produce better quality findings. It would have been more robust to recruit all categories of HCP across all the units in the hospital to allow for generalization of our findings.

Table 2. Knowledge and attitude regarding hand hygiene

Response	The importance of hand hygiene is emphasized by my supervisor (%)	When busy it is more important to complete my task than to perform hand hygiene (%)	Hand hygiene practice can reduce medical cost associated with hospital acquired infections (%)	Hands are the most common vehicles for infection transmission (%)	Lack of acceptable antimicrobial agent can be a reason for not washing hands (%)	An infectious disease contracted in the health care setting may threaten a person's life (%)	Hand hygiene is an indispensable part of hygiene culture (%)	Soap and water is provided at designated areas in the wards (%)	I always wear new gloves before attending to patients (%)	I am aware of the existence of guidelines for infection control in this centre (%)
Strongly agreed N= 82	55(67.1)	16(19.5)	58(70.7)	64(78)	16(19.5)	63(76.8)	56(68.3)	47(57.3)	59(72.0)	54(65.9)
Agreed N= 82	24(29.3)	22(26.8)	21(25.6)	17(20.7)	19(23.2)	16(19.5)	22(26.8)	28(34.1)	20(24.4)	25(30.5)
Disagreed N= 82	2(2.4)	27(32.9)	1(1.2)	1(1.2)	27(32.9)	1(1.2)	3(3.7)	6(7.3)	2(2.4)	2(2.4)
Strongly disagree N= 82	1(1.2)	17(20.7)	2(2.4)	0(0.0)	20(24.4)	2(2.4)	1(1.2)	1(1.2)	1(1.2)	1(1.2)

Overall attitude Frequency (%)
 Positive 77(93.9)
 Negative 5(6.1)
 Total 82(100)

Table 3. Hand hygiene practices of respondents

	I wash hands after touching a potentially contaminated object (%)	I wash hands before patient contact (%)	I wash hands after contact with patient's skin (%)	I wash hands after removing gloves (%)	I wash hands if they feel /look dirty (%)	I wash hands with soap and water after using the toilet (%)	I wash hands after contact with blood or body fluids (%)	I wash hands before caring for a wound (%)	I wash hands after exiting patient's room (%)	I wash hands before suctioning a patient (%)	I wash hands before leaving my duty post (%)	Average score %
Gender												
Male (n= 64)	63(98.4)	46(71.9)	64(100)	63(98.4)	64 (100)	57(89.1)	64 (100)	50(78.1)	57(89.1)	42(65.6)	55(87.5)	88.9
Female (n= 18)	18(100)	18(100)	18(100)	18(100)	18 (100)	17 (94.4)	18 (100)	16(88.9)	17(94.4)	12(66.7)	18(100)	92.5
Designation												
Doctor (n= 18)	18(100)	10 (55.6)	18(100)	18(100)	18 (100)	17 (94.4)	18 (100)	11(61.1)	16(88.9)	8(44.4)	14(77.8)	83.8
Nurse (n= 36)	35(97.2)	27(75.0)	36(100)	36(100)	36 (100)	30 (83.3)	36 (100)	33(91.7)	31(86.1)	28(77.8)	32(88.9)	90.9
Health assistant (n= 28)	28 (100)	21(75.0)	28(100)	28(100)	28 (100)	27 (96.4)	28 (100)	22(78.6)	27 (96.4)	18(64.3)	28(100)	91.9
Ward												
Male Surgical Ward (n= 19)	18(94.7)	11 (57.9)	19(100)	19(100)	19 (100)	16 (84.2)	19(100)	14(73.7)	17(89.5)	13(68.4)	18(94.7)	87.6
Female Surgical Ward (n= 20)	20(100)	15 (75.0)	20(100)	19(95.0)	20 (100)	19 (95.0)	20(100)	16(80.0)	19(95.0)	13(65.0)	19(95.0)	90.9
Main Operating Theatre (n= 25)	25(100)	15 (60.0)	25(100)	25(100)	25(100)	21(84.0)	25(100)	20(80.0)	21(84.0)	15(60.0)	20(80.0)	86.2
Special Care Baby Unit (n= 18)	18(100)	17 (94.4)	18(100)	18(100)	18(100)	18(100)	18(100)	16(88.9)	17(94.4)	13(72.2)	17(94.4)	94.9

5. CONCLUSION

The knowledge, attitude and practice of hand hygiene of HCP in FMC Azare is optimal. However, continuous training on infection prevention and control with emphasis on hand hygiene and other strategies is recommended to allow for improvement in compliance to the concept of standard precautions.

FUNDING

The funding for this study was provided by the management of the Federal Medical Centre, Azare, Nigeria.

CONSENT

As per international standard informed and written consents has been collected and preserved by the authors.

ETHICAL APPROVAL

Prior approval was obtained from the research ethics committee of the hospital.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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