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**Assessment of Hand Washing Hygiene Practices in Prevention of Cross Infections Among Midwives in Imo State University Teaching Hospital, Orlu, Imo State, Nigeria**

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**Abstract**

**Introduction:**

Studies have shown that effective hand washing hygiene can lower the prevalence of most health care associated infections especially nosocomia infections. Therefore, the practice of hand washing among medical personnel is very crucial in the prevention of the transfer of pathogenic micro-organisms from nurses to patients in the course of rendering care. The practice of hand washing by aseptic techniques is regarded as the most effective measure in the prevention of cross infections hence the need for health workers especially midwives to practice it.

**Materials and Methods:**

The study is a cross-sectional descriptive study that assessed the extent to which hand washing hygiene in the prevention of cross infections is practiced among midwives in Imo State University Teaching Hospital (IMSUTH), Orlu. The study which lasted for 14 working days used 175 Midwives randomly selected in the Teaching Hospital. Self-administered questionnaire was used for data collection. Data were analyzed with the use of descriptive statistics.

**Results:**

The findings showed that 111(63.43%) of the respondents regarded hand washing as a process of decontamination of hands, 57(32.57%) respondents perceived it as removal of microorganism from hands, while 7(4%) of the respondents admitted that they cannot remember what hand washing hygiene means. Respondents had varied views on the benefits of hand washing hygiene as 85(48.57%) saw it as useful in protecting patients from nosocomial infections while 46(26.29%) said it is useful in preventing transmission of HIV. About 160(91.43%) of the respondents practiced hand washing while 15(8.57%) did not. Also 121 (73.3%) of the respondents admitted that inadequate hand hygiene equipment affects the extent to which hand washing hygiene is practiced in the hospital.

**Conclusion:**

The study revealed a gap in the knowledge of hand washing hygiene among the respondents, as well as inappropriate availability of materials to enhance the practice of hand washing hygiene. Therefore, meaningful strategies that will increase the knowledge and practice of hand washing hygiene should be adopted.

**Keywords:** Knowledge, Hand washing, Midwives, Practice

**Introduction:**

Health care associated infections due to poor hand washing hygiene have been linked to unacceptably high levels of morbidity, mortality, and health care cost among patients. Effective hand washing hygiene can lower the prevalence of various health care associated infections. Therefore, prevention of nosocomia infections in hospitals can be achieved by effective hand washing among the medical personnel (1-3). Nurses having good knowledge and practice of hand washing as well as using aseptic techniques are very important in the prevention of pathogenic microorganisms in hospitals. This is considered as one of the most effective measures of controlling infections (4-6) because most health care associated infections (HAI) are thought to be transmitted by the hands of health care providers (HCP) through direct contact (7,8). Therefore, hand washing hygiene among health care providers play a central role in preventing the transmission of infections agents.

Studies have shown that hospitals are seen as places where sick people go with the expectation of getting better when sick but most times, there is the risk that hospitalized patients may become infected during their stay in the hospital (9, 10). The World health organization (WHO) has estimated that over 1.4 million people suffer from nosocomial infections and that this proportion is over 20 times higher in low and middle income countries. This constitutes the leading cause of mortality and morbidity among hospitalized patients thereby, presenting considerable public health burden (11-14).

Despite the fact that researchers have advised health workers to adopt the universal approach of hand washing hygiene in hospitals, yet the extent to which they heed to this practice is not encouraging (15-18). There is high rate of hospital-acquired infections in many teaching hospitals especially in developing countries where factors like understaffing, poor sanitation, lack of adequate water, hand washing sinks, limited finances and over-crowding constitute constraints to hand washing hygiene. The result is that a single severe nosocomial infection can cost the hospital resources more than the entire annual budget (19-21). Notwithstanding the proven importance and benefits of washing hand, proper hand washing is not as practiced as desired to prevent infections, especially in the developing countries with the greatest burden of infectious diseases (22,24). A survey undertaken in Bangladesh indicated that hand washing practice with soap before eating was much lower than after defecation, and a gap persists between perception and practice of proper hand washing practices with soap (25,26)

Several researchers have argued that a health worker who is experienced on the job, has adequate knowledge on the transmission of blood-borne pathogens, and also if committed to positive occupational safety measures will be more likely to be complaint with hand washing hygiene than others. Realizing the fact that complex interrelationship between a potential host and an infectious agent will produce infections, health workers' compliance to hand washing hygiene is an efficient and effective means of preventing and controlling health care-associated infections (27-29). Therefore, health care professionals, especially nursing staff should perform hand washing hygiene using the correct technique as often as possible (30). This study aimed to assess

the extent to which health care professionals especially nurses practice hand washing hygiene to minimize nosocomial infections in Teaching Hospitals.

**Materials and Methods**

The study was a cross-sectional descriptive study that assessed the extent to which midwives practices hand washing hygiene to prevent cross infections in Imo State University Teaching Hospital (IMSUTH), Orlu. The inclusion criterion for participants was being a registered nurse midwife and working in the Teaching Hospital. The study lasted for 14 working days in April 2020 and used 175 Midwives randomly selected in the Teaching Hospital. Self-administered questionnaire which was collected by the researchers on completion, was used for data collection. The questionnaire constituted both open and closed-ended questions. Data were analyzed with the use of descriptive statistics.

**Ethical Consideration**

Ethical committee of Imo State University approved the study. Thereafter, a letter for permission to conduct the study was written to the head of department Imo State University Teaching Hospital Orlu. The approval of this letter enabled the researchers to distribute and collect the completed questionnaire without any hindrance. A verbal consent for voluntary participation was obtained from each respondent. All the respondents were assured that the study will not involve any invasive procedure. Therefore, the anonymity of the respondents was maintained and none of their names was mentioned in the course of this work.

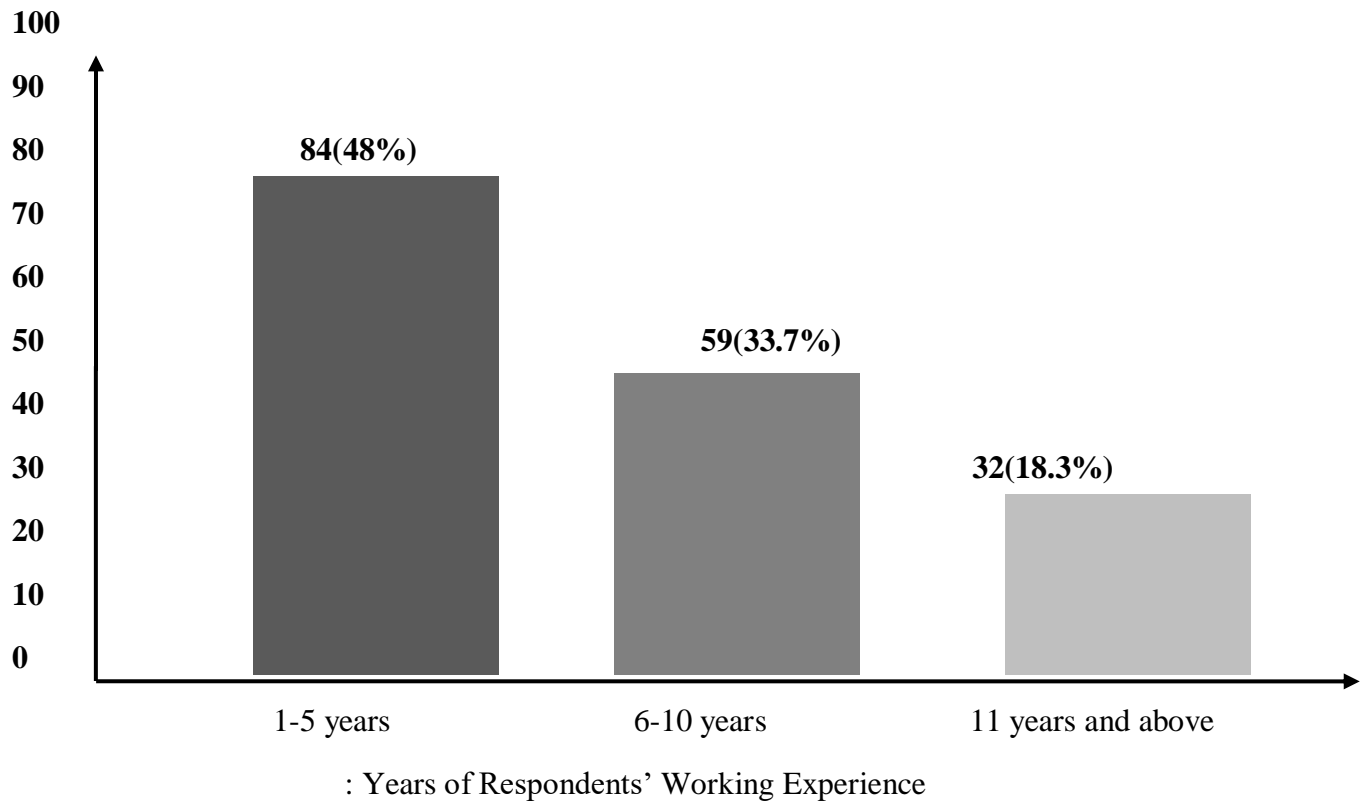
**Results:**

Table.1: Respondents and their cadre.

<b>Cadre</b>	<b>Frequency (F)</b>	<b>Percentages (%)</b>
Nursing officer 1	55	31.4%
Nursing officer II	42	24.0%
Senior Nursing officer	25	14.3%
Principal officer	23	13.1%
Assistant chief nursing officer	18	10.3%
Chief nursing officer	12	6.9%
<b>Total</b>	<b>175</b>	<b>100%</b>

From table.1 above a good number of the respondents 55(31.4%) and 42(24%) were nursing officer 1 and nursing officer II respectively. See table for the proportion of other cadres.

**Figure 1:** A simple bar chart showing the years of working experiences of the respondents.



From the simple bar chart above, 84(48%) of the respondents had 1-5 years' working experience, 59(33.7%) had 6-10 years while 32(18.3%) had 11 years and above working experience.

**Table2:** Respondents and sources of information. on hand washing

Sources of information	Frequency(F)	Percentage
Radio/television	48	27.4%
Newspapers/posters	24	13.7%
Friends/colleagues	15	8.6%
Seminars/conferences	14	8.0%
Schools	56	32.3%
All of the above	18	10.3%
<b>Total</b>	<b>175</b>	<b>100%</b>

Table 2 shows that the respondents got their information on hand washing hygiene from several sources. About 48(27.4%) of the respondents got their information on hand washing from radio and television, 24(13.7%) obtained theirs from newspapers and posters, while 15(8.6%) got

theirs from friends and colleagues. See table 2 for the rest of the places where the respondents got their information.

**Table 3:** respondents and meaning of hand washing hygiene.

<b>Meaning of hand washing</b>	<b>Frequency (F)</b>	<b>Percentage</b>
Process of decontamination of hands	111	63.4%
Process of removing microorganism from hands	57	32.6%
<b>Don't know</b>	<b>7</b>	<b>4.0%</b>
<b>Total</b>	<b>175</b>	<b>100%</b>

Table 3 reveals that the respondents attached two meanings to hand washing hygiene. About **111(63.43%)** of the respondents regarded hand washing hygiene as a process of decontamination of hands, **57(32.57%)** of respondents perceived hand washing hygiene as a process of removing microorganism from hands, while **7(4%)** of the respondents admitted that they do not know the meaning of hand washing hygiene.

**Table 4: Respondents' awareness of the benefits of hand washing hygiene**

<b>Awareness of benefits</b>	<b>Frequency (F)</b>	<b>Percentage</b>
Prevents transmission of HIV	46	26.3%
Increases patients confidentiality	34	19.4%
Protects patient from nosocomial infection	85	48.6%
All of the above	10	5.7%
<b>Total</b>	<b>175</b>	<b>100%</b>

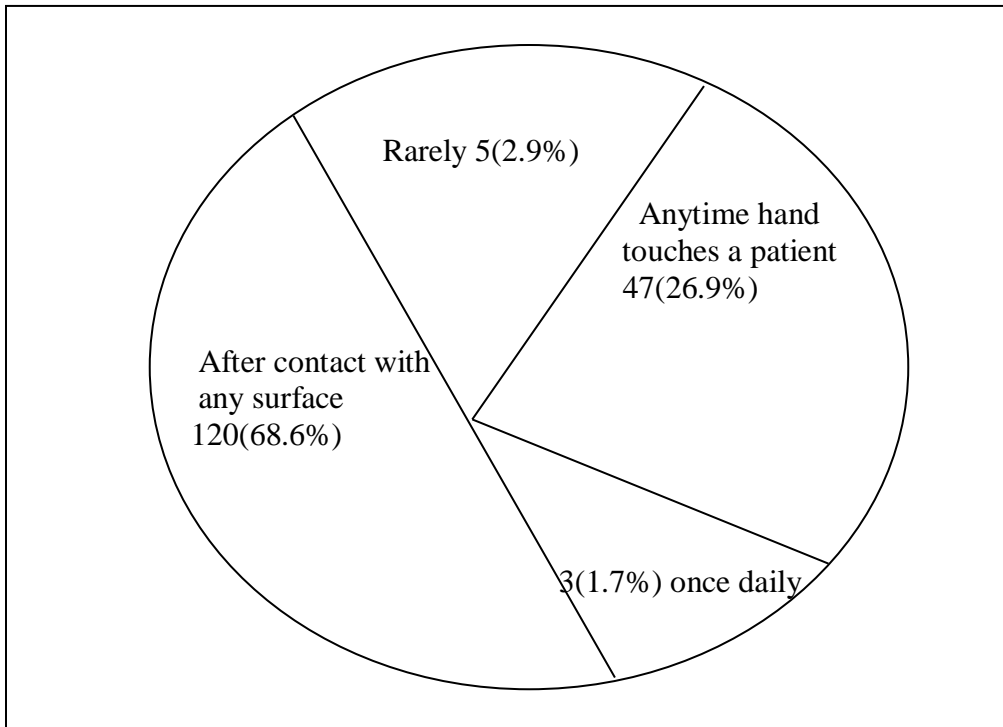
Table 4 above showed that **46(26.3%)** of the respondents perceived hand washing hygiene as useful in the prevention of HIV, **34(19.43%)** of others said that hand washing hygiene increases patients' confidentiality, while **85(48.57%)** stated that hand washing hygiene protects patients from nosocomial infection. See table 4 for other responses from the respondents.

**Table 5:** respondents and the practice of hand washing hygiene.

<b>Practice of hand washing</b>	<b>Frequency(F)</b>	<b>Percentage</b>
Yes	160	91.4%
No	15	8.6%
<b>Total</b>	<b>175</b>	<b>100%</b>

The findings in table 5 revealed that 160(91.4%) of the respondents said they practice hand washing hygiene while 15(8.6%) of the respondents said they do not practice hand washing hygiene.

**Figure 2:** A pie chart representing how often hand washing hygiene is practiced



The result in the pie chart above showed that 120(68.6%) of respondents do hand wash any time hands come in contact with any surface, 47(26.9%) respondents admitted that they practice hand washing hygiene any time their hands touch a patient, 5(2.9%) said they rarely practice hand washing, while 3 (1.7%) indicated that they practice hand washing hygiene once daily.

**Table 6: Respondents and things used in the practice of hand washing hygiene.**

Things used in hand washing hygiene	Frequency (F)	Percentage
Surgical antiseptic	69	39.4%
Alcohol based-hand scrub	48	27.3%
Gloves	37	21.1%
Soap and water	21	12.0%
<b>Total</b>	<b>175</b>	<b>100%</b>

Table 6 above contains things respondents use for hand washing hygiene. From this table, 69(39.4%) of the respondents indicated that they use surgical antiseptic for hand washing hygiene, 48(27.4%) said they use alcohol based-hand scrub, 37(21.1%) admitted they use gloves to maintain hand hygiene, while 21(12.0%) indicated that they use water and soap for hand washing hygiene.

**Table 7: Respondents and factors that limit the practice of hand washing hygiene.**

<b>Things that limit hand washing practice</b>	<b>Frequency (F)</b>	<b>Percentage</b>
Inadequate hand washing hygiene equipment	121	73.3%
Inadequate knowledge of benefits of hand washing hygiene	9	5.5%
Lack of time to wash hands	27	16.4%
Lack of staff training on hand washing techniques	8	4.9%
<b>TOTAL</b>	<b>175</b>	<b>100%</b>

Table 7 contains numerous factors and conditions that limit the practice of hand washing hygiene. From this table, 121(73.3%) of the respondents attributed lack of practice of hand washing hygiene to inadequate hand hygiene equipment, 27(16.4%) said lack of time to wash hands affect hand washing hygiene, 9(5.5%) said that inadequate knowledge of the benefits of hand washing hygiene reduce the practice, while 8(4.5%) of the respondents attributed lack of staff training on the correct techniques of hand washing as one of the factors that limit the practice.

**Discussion:**

The study attempted to assess the extent to which midwives practice hand washing hygiene. It also examined the knowledge of the benefits of hand washing hygiene among midwives who are working in the Teaching Hospital Orlu Imo State. The study provided several significant findings. The results of the study indicate that most of the respondents maintain hand washing hygiene but not sufficient enough as to prevent infections as most of the respondents washed their hands occasionally, which is an insufficient number for proper hand washing hygiene. Also some of the respondents lacked the time to wash hands regularly due to work overload.

It is however, promising that 48(27.3%) of the respondents use instant hand sanitizers when there is no time to do proper hand washing or if water or soap is not available. Our study revealed that the factors that limit hand washing hygiene and also result to skipping hand washing in Teaching Hospitals include: inadequate hand washing hygiene equipment, poor knowledge on benefits of hand washing hygiene, lack of time to wash hands as well as lack of staff training on the correct techniques of hand washing. Another study that examined the reasons why health workers do not wash hands regularly pointed out similar factors such as "not remembering about hand washing

at times", "forgetting to carry out hand washing while on duty", and being so busy that no time for hand washing" (11,13). Other relevant studies on hand washing also showed that "unavailability of hand washing hygiene products, soap, water and paper towels", "lack of time", "lack of knowledge of the benefits of hand washing hygiene", "forgetting to wash hands", and "lack of role models in hospitals" were the main obstacles in promoting hand washing as a good habit of proper hand hygiene (1, 5).

The fact that the respondents had various views on the benefits of hand washing hygiene confirms the view that the respondents lacked relevant training on hand washing hygiene. Therefore, the respondents need training and retraining on effective methods of hand washing. Hygiene. This finding is in agreement with that of (9) where poor knowledge, attitudes and hand washing hygiene practices were found among health care providers in Lagos University Teaching Hospital. Here it was noted that poor hand drying practices were attributed to busy work schedules in patients' care.

**Conclusion:**

Ideally, hand washing should take place at least within intervals of 15 seconds for effective prevention of nosocomial infection, but in the present study, the respondents could not keep this trend showing that there was no effective prevention of nosocomial infections in this Teaching Hospital. This means that a good number of the patients treated in this hospital may be at risk of infections.

The study therefore, recommends the provision of adequate hand washing hygiene equipment like electric dryers and disposable paper towels in the wards. This is necessary because if adequate hand washing equipment is available, nurses will be encouraged to practice regular hand washing hygiene.

Finally, the findings showed that improving compliance on hand washing hygiene practices among midwives, will require regular seminars/workshops or conferences to create awareness on benefits of correct hand washing hygiene techniques.

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