

Guardians of Health: Exploring Hand Hygiene Practices, Knowledge and Hurdles among Public Health Nurses in Effutu Municipality

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Abstract

Background: Hand hygiene has been recognized as an upfront yet a vital practice that halts the transmission of nosocomial contagions or healthcare-associated diseases in hospital locations. In healthcare organizations, hand hygiene is an important component of contagion prevention and protects patients' safety as a low-cost intervention.

Objectives: The objective of the present study was to evaluate hand hygiene practices among public health nurses in Trauma and Specialist Hospital and Winneba Municipal Hospital in the Effutu Municipality in the Central Region of Ghana.

Methods: This study employed a quantitative approach with a descriptive cross-sectional design. Structured questionnaires were used to collect data from 100 respondents through simple random sampling technique. Data analysis was done using Statistical Package for Social Sciences (SPSS), version 21.

Results: Findings revealed a low level of knowledge on hand hygiene (45%) among the respondents and a high hand hygiene practice (79%). Most of the respondents always washed their hands immediately after a risk of body fluid exposure (95%) and few always washed their hands before touching a patient (60%). Most of the respondents always rubbed soap on wet hands before rinsing (78%) and few of them always allowed their hands to dry (16%). The barriers which prevented most of the respondents from washing their hands in the health facility were busy work schedules (65%), forgetfulness (61%), lack of hand hygiene resources in the health facility (38%), minimal patient contact (37%) and lack of knowledge on hand hygiene (13%).

Conclusion: Respondents in this study exhibited a low level of knowledge on hand hygiene yet, hand hygiene practice among them was found to be somewhat satisfactory. The study recommends that multifaceted and dedicated efforts must be made to rectify the barriers which impede public health nurses from effectively complying with hand hygiene practices in the health facilities.

Keywords: Hand Hygiene, Nosocomial, Patients, Ghana, Cross-sectional

1. Background

The hand is an important medium of transmitting infections. This is further worsened in hospital settings where sources of infections are abundant. Therefore, the activities of doctors, nurses or other medical staff who care for patients are important in ensuring effective and safe practice. Nurses play a vital role in patient care¹ and while doing so, they are often exposed to health hazards. Therefore, they may act as conduits for transmitting infectious diseases to themselves, family members and other patients.²

Hand hygiene refers to removal of microorganisms

which are transient or killing them and avoiding visible dirt from hands without causing any harm to the skin by using different techniques and hand washing agents.³ Hands of nurses and other medical staff act as a vehicle for the transmission of healthcare-associated pathogens by continuously touching different substances and surfaces such as waste, body fluids, mucous membranes, food, their own body and patients' skin which can be intact or non-intact, different intimate objects while performing healthcare activities.³ Infections from the hands of nurses or other medical staff are also called nosocomial infections.⁴

Globally, the prevalence of these infections is a major patient safety concern in most healthcare jurisdictions. The consequences of these infections are associated with increased healthcare costs, prolonged hospitalization and poor clinical outcomes especially among neonates.⁵ The burden of these infections is higher in low-resourced countries where it is associated with high case fatality rates.⁶

Hand hygiene has been recognized as a simple and important procedure that prevents the spread of healthcare-associated infections or nosocomial infections within hospital settings. As a cost-effective intervention, hand hygiene plays a vital role in infection control and ensures the safety of patients in health care organisations.⁷ It is estimated that more than 1.4 million people across the globe are affected due to hospital acquired infections.⁸ The World Health Organization (WHO) claims that the prevalence of hospital acquired infections is about 5%-10% in the developed countries and roughly 40% in the developing countries or poor ones.⁹

To minimize an incidence of health conditions and other contagions among healthcare workers and healthcare seekers, the United States (US) Centre for Disease Control (CDC) issued a paper in 1983 that commended that healthcare personnel should take safety measures when providing healthcare services for patients who were known or recognized to be infested with pathogens which are blood-borne.¹⁰ This successively brought about the notion of Universal Precautions (UPs) whereby by way of or short of prior understanding of health seekers' contagion status, the UPs should be characteristically utilised.¹⁰ The UPs are a number of safety measures which have been conscripted to stop spreading pathogens of blood-borne source comprising Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV) and Hepatitis C Virus (HCV) to and or from healthcare personnel during provision of health services for all healthcare seekers regardless of their contagion status.¹¹

Complying with standard safety measures particularly, hand hygiene by healthcare providers has been recognized as a gainful way to avoid and manage pathogen contagions among health care providers.¹² Hand hygiene compliance is well-defined as practicing hand hygiene during an indication per commended protocol¹³ whereas adherence to hand hygiene has been explicated as the action of hand cleaning either by soap and water or alcohol hand wipe in harmony with an arranged technique (hand hygiene protocol).¹⁴ A study conducted in Ghana¹⁵ revealed that elements such as hygiene education, satisfactory organizational factors comprising the accessibility of hand-washing materials, and strong illustrations from powerful individuals, could efficaciously change adhesion to hand hygiene activity and decrease the frequency of pathological process. Another study¹⁶, discovered that just 15% of the population in Sub-

Saharan Africa have access to basic hand washing facilities with soap and water. The study further revealed that in urbanized communities, less than a twenty-five percent (24%) of the population have access to hand washing facilities. Generality of hand washing in Sub-Saharan Africa after exposure to excreta has been estimated at 14%.

With regards to the above information, this study sought to assess the level of knowledge of hand hygiene as well as identifying reasons influencing non-adherence to hand hygiene practices among public health nurses in the Trauma and Specialist Hospital and Winneba Municipal Hospital in the Effutu Municipality in the Central Region of Ghana.

2. Objectives

The general objective of this study was to assess hand hygiene practices among public health nurses in Trauma and Specialist Hospital and Winneba Municipal Hospital in the Effutu Municipality in the Central Region of Ghana. Specifically, this study sought to: (i) assess the level of knowledge of public health nurses in Trauma and Specialist Hospital and Winneba Municipal Hospital in the Effutu Municipality regarding proper hand hygiene practices; (ii) reveal self-reported hand hygiene practices carried out by public health nurses in Trauma and Specialist Hospital and Winneba Municipal Hospital in the Effutu Municipality, and (iii) identify the barriers which contribute to non-compliance of proper hand hygiene practices among nurses in Trauma and Specialist Hospital and Winneba Municipal Hospital in the Effutu Municipality.

3. Methods

3.1. Study Design and Participants

A descriptive cross-sectional survey design was adopted as the framework for this study. This design enabled the researcher to involve a large sample in order to be able to generalize the findings of the study to the population under study. The descriptive cross-sectional survey design is directed towards determining the nature of a situation, as it exists at the time of the study. Cross-sectional design is able to measure prevalence of all factors under investigation irrespective of the limited time allocated for the study to be accomplished. The study was conducted in two health facilities both in the Effutu Municipality in the Central Region of Ghana (the Trauma and Specialist Hospital and Winneba Municipal Hospital). All public health nurses in the Trauma and Specialist Hospital and the Winneba Municipal Hospital in the Effutu Municipality were the target population for this study.

3.2. Data Collection

The population of the study was made of all public health

nurses who worked in both hospitals under study at the time of the data collection. A sample of 100 public health nurses from both Trauma and Specialist Hospital and Winneba Municipal Hospital in the Effutu Municipality were considered for the study. Probability sampling technique was used to select the respondents for the study. Specifically, simple random sampling technique was deployed to select the respondents for the study with respect to the inclusion criteria. The respondents were selected at various departments of the health facilities during the morning and afternoon closing periods for nurses in the shift-working system of the two health facilities. This decision gave the selected respondents ample time to answer the questionnaires after accepting to partake in the research. The study employed both inclusion and exclusion criteria for recruiting study respondents. The inclusion criteria considered respondents who were public health nurses in the two facilities and nurses who had consented to participate in the study and were available during the data collection period. In contrast, the exclusion criteria encompassed public health nurses working in both hospitals who declined to participate in the study, as well as those who were unavailable during the data collection phase.

3.3. Statistical Analysis

Slovin's formula was employed to calculate the sample size (n) for this study. Slovin's formula is given by $n = \frac{N}{1+N(e^2)}$, where N represents the estimated population and e signifies the margin of error. In this study, a level of precision set at 0.05 (corresponding to a confidence interval of 95%) was applied. The nurse population from both health facilities was obtained from the health information unit records: 439 nurses in total, consisting of 211 nurses from Winneba Municipal Hospital and 228 nurses from Trauma and Specialist Hospital (Winneba Municipal Hospital, 2022; Trauma and Specialist Hospital, 2021).

$$n = \frac{439}{1+439(0.05^2)} \quad n = 210$$

Nonetheless, due to the constraints posed by a limited data collection timeframe and the respondents' ostensibly demanding work schedules, a total of 100 participants provided complete responses to the survey instrument yielding a response rate of 48%.

The study included public health nurses with years of working experience from one year and above present at the Trauma and Specialist Hospital and the Winneba Municipal Hospital during the data collection period and who agreed to take part in the study. Public health nurses in the Trauma and Specialist Hospital and the Winneba Municipal Hospital who were on leave, those with less than one one year of working experience as well as those

who refused to participate in the study were excluded from the study. A structured, self-administered questionnaire with both open ended and close-ended questions was used to collect data from the selected respondents. The questionnaire was developed using information from the WHO. The questionnaire was structured into four sections. Section one was on the demographic data of each respondent; section two assessed the knowledge of respondents on hand hygiene; section three investigated the self-reported hand hygiene practices among the selected respondents and finally, the last section identified the factors which influence non-compliance to hand hygiene among the respondents. In ascertaining the effectiveness of the questionnaire, it was validated as the questionnaire was given to two experts in public health to examine it in order to ascertain whether it matched with the specific research questions. Again, after the responses from the experts were received and the right corrections were made, a pilot test was conducted on 25 public health nurses with the questionnaire before the data collection process took a full scale. Data obtained from the respondents was fed into SPSS software version 21 to generate the findings of the study. Each completed questionnaire was checked visually for completeness before being fed into the SPSS software. Descriptive statistics was used to interpret the findings of the study. The findings of the study were revealed using tables and charts. The purpose, relevance and consequences of this study were well explained to the respondents before enrolling them in the study at their will. Those who refused to take part were allowed. The Trauma and Specialist Hospital which is located in Winneba, is a specialized secondary referral health facility that has been upgraded as the Central Regional General Hospital in the Effutu Municipality. It serves as the last referral point for the other hospitals, health centers and clinics in the municipality and beyond. The catchment area is Effutu and the surrounding districts. The Winneba Municipal Hospital is a National Health Insurance Scheme, an accredited public health facility in Winneba and it is located few meters away from the Winneba main market. The hospital serves the people of Winneba and its environs and is strategically positioned to serve the health needs of its population. To ensure that all ethical principles were observed, a formal letter was issued by the Department of Health Administration and Education of the Faculty of Science Education of the University of Education, Winneba to Regina Brown. Both hospitals accepted and gave approval through the endorsement of the introductory letter before the data collection started. In effect, all ethical protocols were duly observed.

4. Results

4.1. Demographic Characteristics of the Respondents

The demographic characteristics are outlined in Table 1.

Table 1. Demographic Characteristics of the Respondents

Characteristics	Frequency	Percentage (%)
Age of respondents		
20-30	50	50%
31-40	46	46%
41-50	4	4%
Gender of respondents		
Males	21	21%
Females	79	79%
Years of work experience of respondents		
1 year	31	31%
2 years	14	14%
3 years	13	13%
4 years and over	42	42%
Educational qualification of respondents		
Certificate	22	22%
Diploma	52	52%
Bachelor's degree	21	21%
Second degree	5	5%
Religion of respondents		
Christianity	88	88%
Muslims	11	11%
Traditionalist	1	1%
Marital status of respondents		
Married	58	58%
Single	42	42%
Training on Hand Hygiene		
Yes	99	99%
No	1	1%

Source: Field data, September, 2022.

Table 2. The Level of Knowledge of Respondents Regarding Effective Hand Hygiene Practices

Knowledge Item	Total correct score (%)
The main route of cross transmission of potentially harmful germs between patients in a health-care facility	53%
The most frequent source of germs responsible for health care-associated infections	21%
Hand hygiene actions that prevent transmission of germs to the patient	70%
Hand hygiene actions that prevent transmission of germs to a nurse	29%
Statements on alcohol-based hand rub and handwashing with soap and water are true	25%
Minimal time needed for alcohol-based hand rub to kill most germs on hands	63%
Actions to be avoided, as associated with increased likelihood of colonisation of hands with harmful germs	33%
Type of hand hygiene method required in specific situations	64%
Overall mean score on knowledge items	44.8%

Source: Field data, September, 2022.

The age group of 20-30 years constitutes the majority (n = 50, 50%), followed by the age range of 32-40 (n = 46, 46%). In terms of gender distribution, females comprise the majority (n = 79, 79%), while Christianity represents the predominant religion (n = 88, 88%), followed by Muslims (n = 11, 11%). The highest number of respondents reported having four years of experience (n = 42, 42%), followed by two years (n = 14, 14%) and one year (n = 31, 31%). Among the educational qualifications, the most common was a diploma certificate (n = 52, 52%), followed by a certificate (n = 22, 22%), bachelor's degree (n = 21, 21%), and a small percentage holding second degrees (n = 5, 5%). Marital status reveals that the majority of respondents were married (n = 58, 58%), with the remaining respondents being single (n = 42, 42%). It's worth noting that an overwhelming majority (n = 99, 99%) of respondents, except for a single respondent (1%), had received training on hand hygiene.

4.2. The Level of Knowledge of Respondents Regarding Effective Hand Hygiene Practices

In accordance with the first objective of this study,

participants were presented with inquiries pertaining to effective hand hygiene practices. Their task was to discern and choose the most accurate option from the given choices. The assessment of respondents' knowledge level was gauged by calculating the mean score across all the posed questions. Scores falling below 50% were categorized as indicative of a low level of knowledge, scores ranging from 51% to 69% were classified as average or fair, scores spanning 70% to 80% were considered indicative of a high level of knowledge, and scores ranging from 81% to 100% were characterized as very high.

Upon examination of Table 2, it is evident that the survey encompassed a total of eight distinct items. By averaging the values of these eight items, the resultant mean score amounted to 44.8. This observation serves to underscore a prevailing low level of knowledge concerning hand hygiene practices among the surveyed respondents.

4.3. The Self-Reported Hand Hygiene Practices Carried Out by Respondents

The investigation delved into the self-reported hand hygiene

Table 3. The Self-reported Hand Hygiene Practices Carried Out by Respondents

Effective Hand Hygiene Practice	Always (%)	Sometimes (%)
Before touching a patient	60%	39%
After touching a patient	90%	10%
Immediately after a risk of body fluid exposure	95%	4%
After exposure to the immediate surroundings of a patient	63%	37%
Immediately before a clean/aseptic procedure	77%	23%
After wearing gloves	91%	9%
Use of warm running water	34%	40%
Use of cold running water	78%	18%
Rubbing soap on wet hands before rinsing	78%	18%
Use of alcohol-based hand rub	56%	44%
Use of disposable paper towels	44%	54%
Overall mean score on effective hand hygiene practice items	70%	27%

Source: Field data, September, 2022

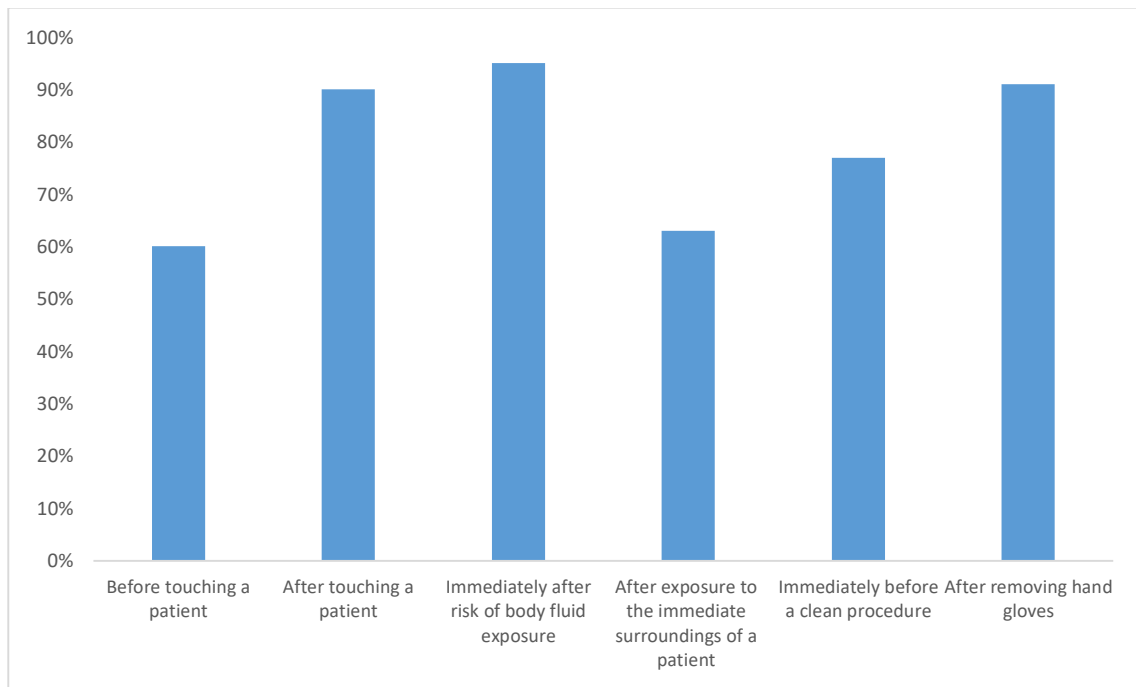


Figure 1. Hand Hygiene Practices Performed always among the Respondents. Source: Field data, September, 2022.

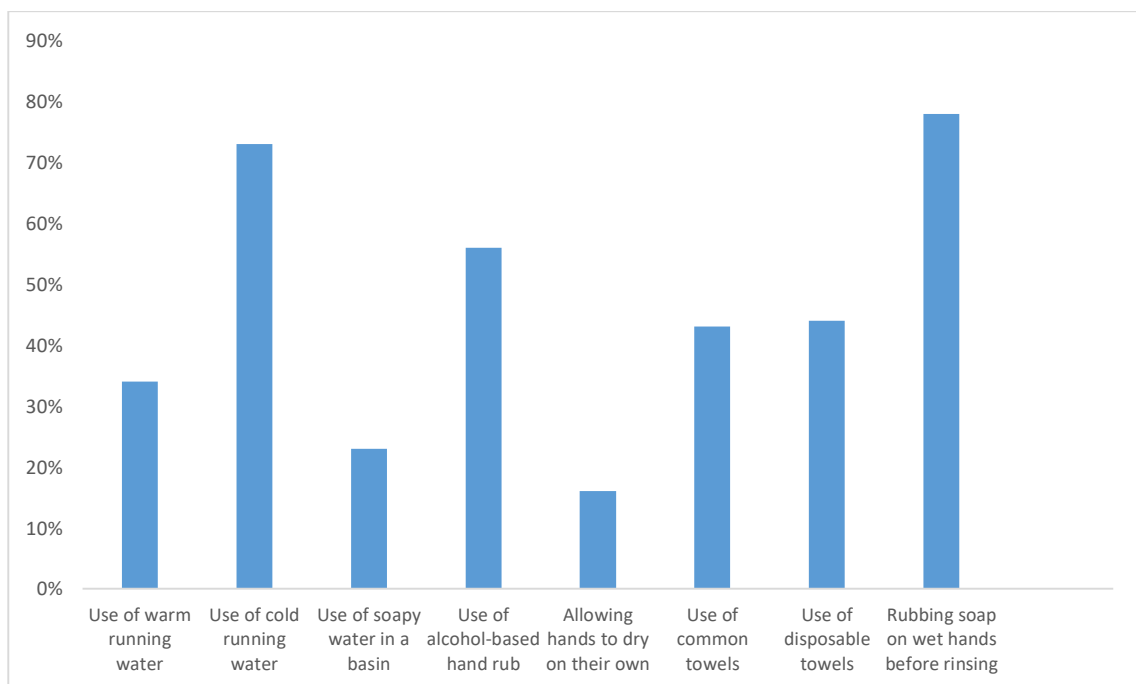


Figure 2. Hand Hygiene Techniques Utilised always among the Respondents. Source: Field data, September, 2022.

practices of the participants, constituting the study's second objective. A dual-dimensional array of questions was administered, encompassing inquiries concerning their interactions with patients (pertaining to the initial six items listed in Table 3), as well as the techniques employed during their hand hygiene routines (encompassing the subsequent five items within Table 3).

The aggregate mean value of the entire set of items was computed. As discernible from the data presented in Table 3, respondents exhibited a noteworthy level of consistence adherence to hand hygiene practices, thereby denoting a high or commendable standard in this regard. Figure 1 and 2 provide a comprehensive graphical representation that details the analysis of respondents' adherence to hand hygiene practices.

4.4. Barriers to Effective Hand Hygiene Practices among the Respondents

The last objective of the study was to identify the various impediments that hamper the respondents from effectively

complying to hand hygiene. The study found out that the most mentioned impediment was busy work schedules (65%) and the least was found to be hand hygiene not considered important (6%). Other mentioned impediments were forgetfulness (61%), lack of training on hand hygiene (8%), lack of knowledge on hand hygiene (13%), lack of hand hygiene resources in the health facility (38%) and finally, minimal patient contact (37%). Table 4 and Figure 3 depict these findings.

5. Discussion

5.1. Study Demographics and Knowledge on Hand Hygiene

The dominance of females and Christians within this study is consistent with analogous research conducted in the broader Ghanaian context (Ghana).^{17,18} This alignment can be understood in light of nursing's well-acknowledged association with a predominantly female workforce and the prevalent Christian demographic within the specific study setting.

Table 4. Barriers to Effective Hand Hygiene Practices among the Respondents

Barrier	Frequency	Percentage (%)
Busy work schedule	65	65%
Forgetfulness	61	61%
Lack of training on hand hygiene	8	8%
Lack of knowledge on hand hygiene	13	13%
Lack of hand hygiene resources in the facility	38	38%
Minimal patient contact	37	37%
Hand hygiene not important	6	6%

Source: Field data, September, 2022.

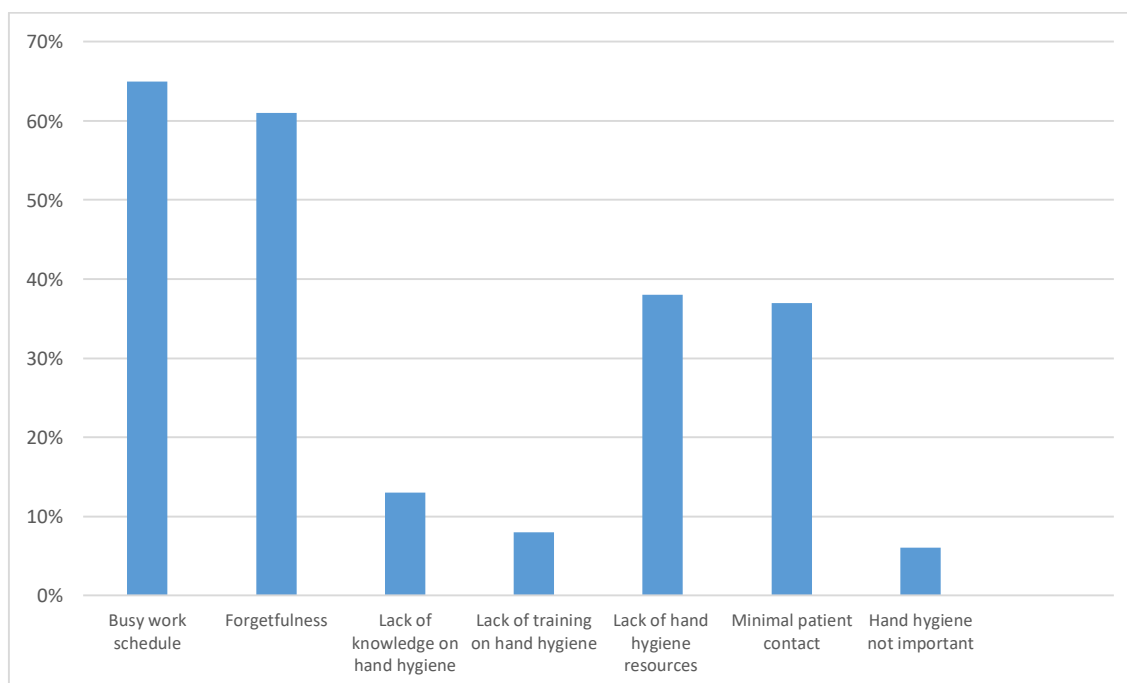


Figure 3. Barriers to Effective Hand Hygiene Practices among the Respondents. Source: Field data, September, 2022.

Within the scope of the study's first objective, respondents were presented with inquiries concerning effective hand hygiene practices. Responses were evaluated against a mean score threshold below 50%, indicating poor or low

knowledge. The computed mean score of 44.8% discerned in this investigation reflects a low or poor level of comprehension pertaining to hand hygiene among the respondents. In contrast, the findings by Thompson and

Ashong²⁰ highlighted a substantial understanding of hand hygiene among their respondents (75.3%). Likewise, Amisssah et al.¹⁷ observed a reasonable grasp of hand hygiene among over half of their participants (51.2%). Interestingly, despite approximately 99% of respondents having received training in hand hygiene, the observed outcomes are, to some extent, unanticipated yet not without precedent. An examination of respondent demographics reveals a notable proportion (95%) without advanced degrees. This characteristic may accentuate a tendency for respondents to prioritize procedural adherence over comprehending the underlying knowledge. In essence, the majority of the respondents are without advanced degree and might be more inclined to follow established procedures rather than grasp their underlying rationale. This phenomenon of procedural compliance without a full comprehension of the underlying principles is recurrent among certificate and diploma nurses, particularly within the Ghanaian context. Concurrently, extant research underscores the detrimental repercussions of inadequate hand hygiene practices among healthcare workers, which can lead to nosocomial infections.⁴ The ramifications encompass escalated healthcare expenses, extended hospital stays, and compromised clinical outcomes, particularly in the neonatal context.⁵ These ramifications are especially pronounced in low-resource settings, where they correlate with elevated case fatality rates.⁶ Given these circumstances, it is imperative for public nurses to possess a heightened understanding of hand hygiene to align effectively with compliance standards. This knowledge would serve as a pivotal instrument in curtailing the prevalence of nosocomial infections and their associated adversities.

5.2. The Self-Reported Hand Hygiene Practices Carried Out by Respondents

The second objective aimed to investigate hand hygiene practices. Overall, there was a high level of compliance with hand hygiene practices among the respondents. The most frequently observed hand hygiene practice was immediately after a risk of body fluid exposure (93%), while the least observed practice was after exposure to the immediate patient surroundings (63%). In a previous study, optimal compliance was found after blood fluid exposure (57.5%), and the poorest adherence to hand hygiene was noted before touching patients (17.3%).⁴ Another study reported 100% compliance for hand hygiene after touching a patient and immediately after a risk of body fluid exposure, while compliance was 87.7% immediately before a clean/aseptic procedure.¹⁹ Consistent with the earlier discussion, certified nurses are inclined to adhere to established procedures even with limited supervision. Therefore, it's not surprising that respondents, despite poor knowledge of hand hygiene, exhibit high adherence to hand hygiene practices. Nonetheless, the observed gap between knowledge and practice among public nurses in

the study warrants attention. This is especially significant as these professionals are tasked with educating the public and, consequently, are expected to possess substantial knowledge of hand hygiene practices. This knowledge-practice gap situation raises concerns, as it's plausible that while they adhere to practices taught, they might execute them inaccurately due to a lack of understanding behind the rationale of the hand hygiene procedure. For example, a noteworthy 65% of respondents indicated never using soapy water for hand washing, a method more effective at germ removal than plain water as per the WHO standards. Moreover, approximately 60% allowing their hands to air-dry and using shared towels instead of disposable paper towels for drying raises questions about the availability of adequate hand hygiene resources within the health facilities in this context.

5.3. Barriers to Effective Hand Hygiene Practices among the Respondents

The last objective of the study was to identify the various impediments that hamper the respondents from effectively complying to hand hygiene. Several reasons or factors could insight nurses from complying with effective hand hygiene practices. These factors have been revealed to emanate from personal factors such as forgetfulness, busy working schedule, lack of knowledge on hand hygiene, lack of training, income levels and institutional factors which include lack of hand hygiene resources in addition to lack of health facility policy on hand hygiene compliance. Prior studies such as Thompson and Ashong,²⁰ Amisssah et al.,¹⁷ Chipungu et al.²¹ as well as Alp and Damani²⁰ reported similar impediments. High patient load in the Ghanaian public healthcare facilities could lead to busy work schedule of nurses which can influence non-compliance to hand hygiene. With the exception of forgetfulness being a personal weakness of some nurses, forgetfulness is related to busy work schedule in the sense that busy nurses are likely to forget to wash their hands on regular basis. The absence of resources such as running water, soap and alcohol-based hand rub in the health facilities might thwart the effort of nurses in the compliance of effective hand hygiene practices. Even so, one can observe that the challenges or impediments to hand hygienic practices observed in this study cannot be addressed with one approach such as educating the nurses about relevance of hand hygienic practices. While as education and awareness is essential, supervising and providing nurses with basic hand hygiene materials and equipment ought not to be overlooked as this is a very common practice in developing countries such as Ghana. It is therefore crucial, that hand hygienic practices are not only made known to the people but is also made the easiest choice in the quest to fight against germs or nosocomial infections in the practice of health and healthcare.

The final objective of this study focused on identifying impediments that hinder effective compliance with hand hygiene among respondents. Numerous factors can deter nurses from adhering to proper hand hygiene practices. These factors from the study stem from both personal and institutional realms, encompassing forgetfulness, demanding work schedules, limited knowledge of hand hygiene, inadequate training, income levels, and institutional factors such as insufficient hand hygiene resources and the absence of health facility policies pertaining to hand hygiene compliance. Comparable impediments have been documented in prior studies, including those by Thompson and Ashong,²⁰ Amisshah et al.,¹⁷ Chipungu et al.,²¹ and Alp and Damani.²² Notably, the high patient load within Ghanaian public healthcare facilities can contribute to the demanding work schedules of nurses, potentially influencing non-compliance with hand hygiene protocols. While forgetfulness is a personal factor for some nurses, it can be linked to busy work schedules, where the demands of their tasks might cause them to overlook regular hand hygiene practices. The lack of essential resources like running water, soap, and alcohol-based hand rub within health facilities could further hinder nurses' efforts to comply with effective hand hygiene practices. However, it is evident that addressing the challenges or impediments to hand hygiene practices identified in this study requires a multifaceted approach. While education and awareness are essential components, overlooking the significance of supervision and providing nurses with fundamental hand hygiene materials and equipment would be a misstep, particularly in developing countries like Ghana. Therefore, it is crucial not only to raise awareness about hand hygiene practices but also to ensure that these practices are the most accessible choice in the ongoing battle against germs and nosocomial infections within the realm of health and healthcare practices.

5.4. Study Limitations and Strengths

As a descriptive study investigating hand hygiene knowledge and practices, this research faced some limitations. Potential shortcomings include sampling bias due to the chosen sampling technique, the inability to establish causal relationships, inability of tracking of temporal changes due to cross-sectional design, and the presence of social desirability responses can be noted as the limitations of the present study. Nevertheless, the study offers significant insight into hand hygiene practices, highlighting the disparity between knowledge and actual practice among public nurses.

6. Conclusion

The findings of this study indicated widespread insufficient hand hygiene knowledge among public health nurses. Moreover, high scores related to respondents'

handwashing practice may indicate a need for strident public health education programs to promote and sustain the practice to the highest expected levels. This study revealed the need for further improvement in the existing hand hygiene behavioral change communication programs to address the gaps in knowledge, attitudes and practices. Furthermore, multifaceted and dedicated efforts must be made to rectify the barriers which impede public health nurses from effectively complying with hand hygiene practices in the health facilities.

Research Highlights

What Is Already Known?

- There is moderate to high knowledge of hand hygiene practices among health professionals.
- There are mixed findings regarding adherence to hand hygiene practices among professionals.
- Several factors obscure effective hand hygiene practices among professionals, such as forgetfulness, a lack of institutional resources and a lack of knowledge among others.

What Does This Study Add?

- The study highlights that professionals carry out hand hygiene practices without knowing the rationale behind them.
- The study emphasizes the need to adopt effective hand hygiene training techniques.
- The role of supervision is emphasized as a plausible means of improving upon hand hygiene practices

Author Contributions

Conception: COAB, AAB, RB; Acquisition, analysis or interpretation: COAB, AAB, RB, FA, FIS, VK; Drafted the manuscript: COAB, AAB, RB, AOE, YBY; Critically revised the manuscript: COAB, RB, FA, FIS, VK, AOE, YBY; Gave final approval: COAB, AAB, RB, FA, FIS, VK, AOE, YBY; Agrees to be accountable for all aspects of work ensuring integrity and accuracy: COAB, AAB, RB.

Conflict of Interest Disclosures

All authors declared that they have no conflict of interest.

Ethical Approval

This study was approved by the Department of Health Administration and Education of the Faculty of Science Education of the University of Education, Winneba. Permission was sought from respondents and other bodies who mattered in the study and all other ethical protocols were duly followed right from the start of the study to the data collection process. All respondents consented to take part in the study.

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