

# Hand Hygiene by Ward Staff at Dapaong Regional Hospital in Togo

Essohanam Tabana Mouzou<sup>1,2\*</sup>, Sarakawabalo Assenouwe<sup>1,2</sup>,  
Eyram Yoan Makafui Amekoudi<sup>1,3</sup>, Tchaa Hodabalo Towoezim<sup>1,4</sup>, Tchetike Pikabalo<sup>5</sup>

<sup>1</sup>School of Health Sciences, University of Kara, Kara, Togo

<sup>2</sup>Anesthesia and Intensive Care Service, University Hospital of Kara, Kara, Togo

<sup>3</sup>Medical Intensive Care Service, University Hospital of Kara, Kara, Togo

<sup>4</sup>Traumatology and orthopedic Service, University Hospital of Kara, Kara, Togo

<sup>5</sup>Anesthesia and Intensive Care Service, Sylvanus Olympio University Hospital of Lomé, Lomé, Togo

Email: \*essohanam2004@yahoo.fr, eyramyoan@gmail.com, antoinetowezim@yahoo.com, sassenouwe@yahoo.fr, ftchet5@hotmail.fr

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## Abstract

**Introduction:** Hand hygiene (HH) is an effective way to fight infections in healthcare settings. The general purpose of our study was to explore the knowledge, attitudes and practices of health care providers on HH at Dapaong regional hospital (DRH). **Methodology:** This was a prospective, descriptive cross-sectional study conducted from March to June 2022 in the DRH wards. Data were collected using a questionnaire and observation grid. **Results:** 90 care providers were surveyed. Males and non-physician personnel predominated with 57.8%, and 94.4% respectively. The survey on staff's knowledge reported: 31.1% of practitioners did not wash their hands on arrival and departure in services. 24% did not know the difference between simple hand washing (SHW) and hygienic hand washing (HHW). 23.3% did not know the type of soap to use for HHW. The caregivers did not know the type of hand washing (HW) required after a septic and non-septic procedure in respectively 41.6%, and 37.8%. They did not know that there are two types of hand antiseptics (45.4%), nor the amount of antiseptic for HW (78.9%). The survey on staff's attitude regarding HW found that: 70% did not remove all jewelry prior HW, and 51.1% did not know that wearing gloves cannot replace the HW. For HW Staff Practice: 62.2% did not wash their hands before treatment. 91.1% did not spread the soap on their hands and forearms after wetting them. 65.55% did not rinse hands from nails to elbows. **Conclusion:** The HH was poorly known, the attitude of the staff was dangerous in relation to the HH and the practice of HH was very inadequate at the RHC-Dapaong. As a result, there is a need to retrain staff to increase their capacity to prevent care-related infections and enhance pa-

tient safety in the hospital.

## Keywords

Hand Hygiene, Care Providers, Hand Washing, Antiseptics, Dapaong Regional Hospital

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## 1. Introduction

Hygiene is an essential part of the public health mission to reduce the transmission and consequences of disease [1]. As the hand is the gripping organ, it can be used to treat patients and provide support if needed. Thus, it is in constant contact not only with the environment which contains bacteria, viruses, parasites, fungi but also with toxic elements. Indeed, according to the World Health Organization (WHO), adherence to hand hygiene in the care setting is the first global challenge to patient safety: “clean care is safer care”. Clean hands prevent disease transmission and save lives. A clean care is not optional, but an elementary duty [2].

According to the publication of the World Health Organization (2010), if on one side hands are used to care for patients, on the other side, they can be harmful to them. In fact, hands are the main vectors of germs in care units and represent the most common pattern of infection transmission in care units. When the application of hand hygiene (HH) is not done properly, the consequences can be severe [3]. In addition, another WHO publication in 2009 noted that infections associated with care (IAC) affect 5% to 15% of inpatients and 9% to 37% of patients in intensive care units (ICU). The prevalence of 4.5%, 6.7%, 9.5%, and 4.6% was reported in the USA, France, Scotland and Italy respectively [4]. In the United States, it is estimated that nearly 100,000 deaths a year are caused by IAC, while in Europe, in acute care hospitals, nearly 135,000 deaths a year occur as a result of IAS [5].

A study conducted in the Democratic Republic Congo in 2009 by Nsobani on hand hygiene among nurse practitioners in some of the referral hospitals in Kinshasa found that 61.7% of nurses did not wash their hands before giving care to patients. *Staphylococcus aureus* was isolated in 60% and 64% respectively on the hands and the rings of these nurses [6].

A study carried out in Benin in 2012, in the operating rooms of the National University Hospital Hubert Koutoukou Maga in Cotonou, revealed a relative frequency of IAC of around 6.17% [7]. The study carried out in 2017 at the Abomey-Calavi/So-Ava Zone Hospital and University Centre and the Cotonou 5 Zone Hospital in southern Benin revealed an IAC prevalence of around 14.39% [7].

Therefore, hand hygiene in hospitals must be impeccable. Its application constitutes a guarantee for health security. It is one of the main measures against

nosocomial infections (NI).

However, the rate of nosocomial infections in Congo is very high since it is between 10% and 20% [8]. According to Article 9 of Law No. 2009-007 on the Public Health Code of the Togolese Republic, Book II on General Protection and Promotion of the public health, the local administrative authorities are empowered to draw up a health regulation applicable in the territory of their competence. This regulation is made on the proposal of the local health officer. Within the framework of the laws and regulations in force, the health regulations determine the measures to be taken by the administrative authorities to prevent or stop communicable diseases. In this regard, many strategies have been put in place to control and control nosocomial infections in all health regions of the country [9].

At the Dapaong Regional Hospital, despite the strengthening of the skills of the nursing staff in the practice of hand hygiene, cases of infections associated with care and nosocomial infections are still reported. These IAC and NI are very formidable because of the difficulties associated with their handling. There is evidence that these infections are largely preventable, but the methods for doing so are not always optimally followed by caregivers. We do not have data on hand hygiene practice in our medical settings. This is the reason for this study, whose general objective was to assess the knowledge, attitudes and practices of hand hygiene in hospitals, with the specific objectives to:

- assess the level of knowledge of health workers about hand hygiene;
- determine the attitude of health care personnel to hand hygiene;
- appreciate the practice of hand hygiene performed by nursing staff.

## 2. Methodology

It was a prospective, descriptive cross-sectional study conducted from March to June 2022 in the wards of Dapaong RH.

The data were collected using a questionnaire and observation grid.

### 2.1. Study Population

It consisted of all personnel working in wards: medical doctors (MD), medical assistants (MA), midwives (MW), birth attendants (BA), nurses (Nrs), and orderlies (O).

### 2.2. Inclusion Criteria

Included in the study were health workers, who provided care and had direct contact with patients and were present in the inpatient departments during the study period.

### 2.3. Criteria for Not Including

Not included in the study: health workers who were absent or refused to complete the questionnaire.

## 2.4. Sampling

We conducted a prospective, cross-sectional descriptive study with extensive sampling. (The sample is no longer returned to the population after selection).

## 2.5. Data Collection Techniques and Tools

The information collected focused on knowledge, attitudes and practices related to HH. This survey was conducted using a questionnaire and observation grid.

The questionnaire: A series of standardized questions were administered to selected caregivers to explore their knowledge and perceptions of HH. This questionnaire consisted of two parts: identification of the respondent, his knowledge and attitudes about HH (See appendix for the questionnaire). Staff had to answer the questions in writing, after explanation and informed consent the questionnaire was administered to the selected. The questionnaire was tested and corrected before administration. This questionnaire came from several sources, the assembly of which constituted the questionnaire.

The observation grid: it was used to assess the type and quality of the technique used for HDM practice. Health workers were noted by us by observing them in their practice.

## 2.6. Variables Studied

The main variables studied were:

- Level of knowledge of health care personnel on hand hygiene.
- Attitude of nursing staff on hand hygiene.
- The practice of hand hygiene performed by nursing staff.

## 2.7. Data Processing

The data collected were processed using Epi Info software version 7.2.5.0. and manually. Text entry and processing was possible using Microsoft Word Office 2013.

## 2.8. Ethical and Administrative Considerations

The study had received management approval from RHC Dapaong prior to commencing the investigation.

After a clear explanation of the benefits of the study, consent was obtained before the questionnaire was administered. The confidentiality of the information collected was guaranteed. The dignity and freedom of the respondents were respected throughout the investigation.

## 3. Results

During the study period, 90 personnel were surveyed out of 130 expected (69.2%).

### 3.1. Socio-Demographic Characteristics of the Sample

Male personnel accounted for 57.8% with a sex ratio of 1.4. The mean age of was

39 years  $\pm$  6.27 years (ranged 25 to 50 years). The surveyed staff consisted of five (5.6%) medical doctors, 10 (11.1%) medical assistants, 32 (35.6%) nurses, 10 (11.1%) Midwives, 8 (8.9%) birth attendants, and 25 (27.8%) orderlies.

### 3.2. Caregiver's Knowledge of HH

When surveyed regarding HH purpose, staff provided the following answers: protection of both caregivers and patients, and protection of caregivers in 94.4%, and 5.6% respectively. None reported the protection of the patients as HH purpose. In relation to hand washing (HW) requirement, all personnel reported the need of soap and water. Regarding the number of HW types, 85.5% reported a correct answer (**Table 1**).

### 3.3. Knowledge of Caregivers on Hand Washing Timing

When they were surveyed on the timing of hand washing, the following responses were given as reported in **Table 2**: upon arrival and departure from care facilities (68.9%), at departure only (26.7%) and on arrival only (4.4%).

### 3.4. Knowledge of Caregivers of Hand Washing Types and Indications

The difference between simple hand washing (SHW) and Hygienic Hand Washing (HHW), which was based on type of soap and washing duration was known by 73.3% of caregivers (**Table 3**). Whereas the HHW as correct type of HW to perform after a septic care, and the SHW as correct HW to perform after a non-septic care were known by 54.4% and 62.2% of staff respectively (**Table 3**).

**Table 1.** Caregiver's knowledge regarding HH by professional category.

	Professional category						Total 90 N (%)
	MD N = 5	MA N = 10	Nrs N = 32	MW N = 10	BA N = 8	O N = 25	
<b>Purpose of HH</b>							
Protection of caregivers (incorrect)	0	0	0	0	0	5	5 (5.6)
Protection of both caregivers and patients (correct)	5	10	32	10	8	20	85 (94.4)
<b>Requirement for hand washing</b>							
Soap and water	5	10	32	10	8	25	90 (100)
<b>Types of hand washing</b>							
One (incorrect)	0	0	0	0	0	5	5 (5.6)
Two (incorrect)	0	0	1	2	0	5	8 (8.9)
Three (correct answer)	5	10	31	8	8	15	77 (85.5)

**Table 2.** Staff's Knowledge on hand washing timing.

	Professional category						Total
	MD N = 5	MA N = 10	Nrs N = 32	MW N = 10	BA N = 8	O N = 25	90 N (%)
On arrival only (incorrect)	0	0	0	0	1	3	4 (4.4)
At departure only (incorrect)	0	0	10	2	0	12	24 (26.7)
On arrival and departure (correct)	5	10	22	8	7	10	62 (68.9)

**Table 3.** Staff's knowledge of hand washing types and indications.

	Professional category						Total
	MD N = 5	MA N = 10	Nrs N = 32	MW N = 10	BA N = 8	O N = 25	90 N (%)
<b>Difference between SHW and HHW</b>							
Type of soap and washing duration (correct)	5	10	26	9	7	9	66 (73.3)
Washing duration only (incorrect)	0	0	2	0	0	2	4 (4.4)
Type of soap only	0	0	4	1	1	14	20 (22.2)
<b>Type of HW to perform after a septic care</b>							
SHW* (incorrect)	0	0	11	1	0	17	29 (32.2)
HHW <sup>&amp;</sup> (correct)	3	6	18	9	5	8	49 (54.4)
SrHW <sup>#</sup> (incorrect)	2	4	3	0	3	0	12 (13.3)
<b>Type of HW to perform after a non-septic care</b>							
SHW (correct)	1	3	21	2	6	23	56 (62.2)
HHW (incorrect)	4	7	11	8	2	2	34 (37.8)
SrHW (incorrect)	0	0	0	0	0	0	0

\*SHW: Simple Hand Washing; <sup>&</sup>HHW: Hygienic or Sanitary Hand Washing; <sup>#</sup>SrHW: Surgical Hand Washing.

### 3.5. Knowledge of Caregivers of Simple Hand Washing Procedure

The antiseptic soap was known by 69 caregivers (76.7%) to be the recommended soap for SHW, while none knew the duration of hand massage (Table 4).

### 3.6. Knowledge of Caregivers on Antiseptics

The correct amount of antiseptics ( $\geq 5$  ml) required for hand sanitation was known by 19 caregivers (21.1%), and all of them knew at least one hand antiseptic (Table 5).

**Table 4.** Staff's knowledge of simple hand washing procedure.

	Professional category						Total 90 N (%)
	MD N = 5	MA N = 10	Nrs N = 32	MW N = 10	BA N = 8	O N = 25	
<b>Duration of hand massage</b>							
At least 30 seconds (correct)	0	0	0	0	0	0	0
Unknown	5	10	32	10	8	25	90 (100)
<b>Soap to be used</b>							
Ordinary soap (incorrect)	1	0	5	0	0	15	21 (23.3)
Antiseptic soap (correct)	4	10	27	10	8	10	69 (76.7)
<b>Type of towel to be used after rinsing</b>							
Single use (correct)	5	10	29	9	8	18	79 (87.8)
Multi-use (incorrect)	0	0	3	1	0	7	11 (12.2)

**Table 5.** Staff's knowledge on hand antiseptics.

	Professional category						Total 90 N (%)
	MD N = 5	MA N = 10	Nrs N = 32	MW N = 10	BA N = 8	O N = 25	
<b>Name of hand antiseptics</b>							
One	2	2	7	2	1	4	18 (20.0)
Two	3	7	12	6	4	9	41 (45.6)
Three and more	0	1	13	2	3	12	31 (34.4)
<b>Amount of antiseptics used for hand sanitation</b>							
1 ml (incorrect)	0	0	0	0	0	3	3 (3.3)
2 ml (incorrect)	1	2	5	3	2	8	21 (23.3)
3 ml (incorrect)	1	0	6	1	3	4	15 (16.7)
4 ml (incorrect)	1	5	14	5	2	5	32 (35.6)
At least 5 ml (correct)	2	3	7	1	1	5	19 (21.1)

### 3.7. Staff Attitude Regarding Hand Hygiene

Forty-six caregivers (51.1%) thought wearing gloves can replace hand washing (Table 6).

### 3.8. Practice of Hand Hygiene

During the survey, the personnel used to wash hands before and after care in respectively 34 (37.8%) and 61 cases (67.8%), while 63 caregivers (70.0%) removed jewels except wedding ring, and 25 (28.8%) always used antiseptics (Table 7). A correct flushing direction and soap plating during HW were observed in 31 cases (34.4%), and 8 (8.9%) respectively (Table 8). None of surveyed personnel dried his hands after washing or closed the faucet with the hand towel.

**Table 6.** Staff thoughts on glove wearing.

	Professional category						Total 90 N (%)
	MD N = 5	MA N = 10	Nrs N = 32	MW N = 10	BA N = 8	O N = 25	
Wearing gloves can replace HW (incorrect)	2	3	14	4	3	20	46 (51.1)
Gloves cannot replace HW (correct)	3	7	18	6	5	5	44 (38.9)

**Table 7.** Procedure of HH by the staff.

	Professional category						Total 90 N (%)
	MD N = 5	MA N = 10	Nrs N = 32	MW N = 10	BA N = 8	O N = 25	
<b>HW before care</b>							
Yes	2	4	14	5	3	6	34 (37.8)
No	3	6	18	5	5	19	56 (62.2)
<b>HW after care</b>							
Yes	4	8	25	8	5	11	61 (67.8)
No	1	2	7	2	3	14	29 (32.2)
<b>Personnel attitude to jewels arrangement</b>							
Remove all jewels	5	7	7	2	3	3	27 (30.0)
Remove jewels, except wedding ring	0	3	25	8	5	22	63 (70.0)
<b>The use of antiseptics</b>							
Mandatory	1	3	9	2	4	6	25 (28.8)
Optional	4	7	23	8	4	19	65 (72.2)

**Table 8.** Flushing direction and Soap plating during HW procedure.

	Professional category						Total 90 N (%)
	MD N = 5	MA N = 10	Nrs N = 32	MW N = 10	BA N = 8	O N = 25	
<b>Flushing direction during HW</b>							
Rinse hands from elbows to nails (incorrect)	2	3	17	8	6	23	59 (65.6)
Rinse hands from nails to elbows (correct)	3	7	15	2	2	2	31 (34.4)
<b>Soap plating</b>							
Spread soap on hands without wetting them (incorrect)	3	6	28	8	6	24	75 (83.3)
Wet only forearms before spreading soap (incorrect)	1	1	2	1	1	1	7 (7.8)
Wet hands and forearms before spreading soap (correct)	1	3	2	1	1	0	8 (8.9)



## 4. Discussion

### 4.1. Study Limit

We did not take samples from the hands of the nursing staff in order to assess the quality of HH. The study was done during Covid-19, which is a real bias on the results.

### 4.2. Sociodemographic Characteristics

#### ✓ Sample size

The small size included sample was related to the investigation design and the consent of staff. It would be related to the fact that some health workers were afraid of being exposed as setting a bad example during COVID-19.

#### ✓ Age of the personnel

The mean age of respondents was 39 years  $\pm$  6.27 years, with extremes of 25 and 50 years. This result is a reflection of the mostly young health workers constituting valid arms for the RHC-Dapaong.

#### ✓ Category of staff

Among those surveyed non-medical staff accounted for 94.4%. This workforce is inherent in all health facilities and depending on hospital activities requiring more paramedics.

### 4.3. Caregiver Knowledge of HH

#### ✓ Purpose of the HH

The goal of hand hygiene was not known by 5.6% of the respondents. A category in our sample had not received training on HH. Objective recalled by [10]. This staff exposes patients to the risk of infection. DRAME G. [1] in his study in Mali reported a rate of 21.1% not knowing the objective. These staff need training on HH.

### 4.4. HW Definition

All respondents (100%) were aware that the HW consists of washing their hands with soap and water. Indeed, all health personnel had had training on hand hygiene in health facilities in Togo, particularly at RH of Dapaong. The definition recalled by [11].

For DIALLO A it was 98.3% [5]. This knowledge remains to be encouraged, it serves as a basis for practice.

### 4.5. Types of HW

Fourteen decimal four percent (14.4%) of respondents did not know that there are 3 types of HW. This is a misunderstanding or oversight. This rate is much lower than that of DRAME G with 72.6% [1]. In this case the infectious risk in DRAMA G [1] was very high. These types were recalled by [12] [13]. In our context, the study was conducted in the midst of the COVID-19 pandemic. This

is worrisome because with each type of hand washing, its particular indications. This knowledge should allow a good adaptation of the indications.

#### **4.6. Difference between SHW and HHW**

24% of respondents did not know the difference between SHW and HHW. The difference was well defined by [14]. This lack of knowledge exposes staff to the risks of contamination of patients and their environment. This lack of knowledge increases the risk of contamination by inappropriate attitude and practice.

#### **4.7. Hand Rubbing Time with Soap during HW**

All respondents (100%) had no knowledge of friction time during the SHW and therefore did not respect the friction duration. This friction time was recalled by [12]. This lack of staff knowledge increases the poor practice of SHW and a higher risk of contamination by making washing ineffective. Kaba M. [6] reported a rate of 98.6% not knowing the time of friction. This failure is very serious, the time of hand friction contributes to the effectiveness of the SHW. Nursing staff must be trained in hand hygiene.

#### **4.8. Type of Hand Towel to Be Used after Rinsing**

Out of surveyed staff, 12.2% did not know that it is the single-use hand towel that should be used after rinsing. The use of the hand towel was recalled by [5] probably this result would be related to the lack of hand towels in the services, which makes the staff ignore its importance. For Guemning V. [7] 33.2% of the respondents did not know that the towel was recommended.

#### **4.9. Hand Washing Indication.**

Among those surveyed, 31.1% did not know the indications. This was very dangerous with risk of contamination of the patients and the perpetuation of germs on the staff who could contaminate people outside the hospital. The study conducted by DRAME G [1] found a rate of 66.98% not knowing the indications. Hence the need to train or retrain nursing staff on hand washing. This indication was recalled by [5] [12] [15].

#### **4.10. Type of Soap Used for Hand Washing**

Twenty-three decimal three percent of the respondents did not know the type of soap to use for hand washing. Soap used for hygienic hand washing was recalled by [14]. The staff again needs training on hand hygiene. The hygienic washing was recalled by [12].

#### **4.11. Type of Hand Washing after Patient Care**

Thirty-seven decimal eight per cent did not know the type of hand washing to be performed after a patient's care. This type of washing was recalled by [5]. This was yet another misunderstanding of the HW rules.

#### 4.12. Type of Hand Washing after Septic Care

Forty-one decimal six percent of the respondents did not know the type of hand washing to be performed after a septic act, as recalled by [5]. This result noted the great ignorance of the rules of hand hygiene. It is necessary to organize the training of personnel on HW.

#### 4.13. Types of Hand Antiseptics

The existence of two types of hand antiseptics was not known by 54.5% of respondents. The existence of both types of antiseptics was by [14]. This lack of knowledge could be explained by the fact that the hospital did not yet have sufficient hydro alcoholic solutions. This finding corroborates that of GUEMNING V. L. [4] who found 54.5% in his study. Staff still need training.

#### 4.14. Amount of Antiseptic Used for Hand Antiseptics

Seventy-eight decimal nine percent of respondents did not know the amount of antiseptics (more than 5 ml). This quantity was recalled by [1] [5] [16]. This result is related to the fact that caregivers make more use of hand washing without the notion of hand antiseptics and therefore ignore good practices. They need to be trained absolutely.

#### 4.15. Attitudes of Caregivers on Hand Hygiene

##### ✓ Jewelry arrangement

Seventy percent of those surveyed did not know that all jewelry and even the wedding ring had to be removed. These provisions were recalled by [12]. This attitude remains a risk factor that can increase the incidence of IAC in care structures. The study conducted by Musangu *et al.* [8] in the Congo found a similar result (64.6%). Health care workers see jewelry as a precious object. They absolutely need training.

##### ✓ Nail arrangement

All respondents (100%) recognized the importance of nail trimming. This could be explained by the fact that the hands of caregivers in constant contact with patients could injure them and harbour the germs. This practice should be encouraged to increase the effectiveness of the HW. The nail provisions were also recalled by [12].

##### ✓ Hand antiseptics and hand washing

Twenty-seven decimal eight percent (27.8%) of the respondents were unaware that hand antiseptics were optional after hand washing recalled by [5] [14]. This is not a danger in itself.

##### ✓ Wearing of gloves

Among those surveyed, 51.1% did not know that wearing gloves cannot replace hand washing. This is because health workers use gloves more in their actions instead of washing their hands. They should be aware of the importance of

hand washing, it is indicated even before wearing gloves. This attitude is very serious for staff and patients by facilitating the transmission of germs. This rate is lower than that reported by Kaba M. [6] who had found 76.3%. Wearing gloves should never replace hand washing.

#### **4.16. Practices of the Staff Regarding Hand Hygiene**

Despite adequate knowledge on a variety of hand hygiene measures, other necessary practices are not implemented in the Dapaong Regional Hospital.

Of those surveyed, 62.2% did not wash their hands before treatment. This practice is very dangerous, it constitutes a factor of manual transmission that can increase the incidence of IAC in the structures of care recalled by [12].

Thirty-two decimal two percent of respondents did not wash their hands after care. This is a very dangerous practice at the origin of the transmission of germs to the sick and to the environment of care structures recalled by [12].

Ninety-one decimal one percent of the respondents did not spread the soap on their hands and forearms after wetting them. It is a lack of knowledge of the steps of the HW by the caregivers recalled by [5]. This contributes to a decrease in the effectiveness of the gesture, hence the importance of becoming aware.

Of those surveyed, 65.6% did not rinse the hands from the nails to the elbows, a practice recalled by [12].

This bad practice diminishes the benefit expected from hand washing. It is necessary to train staff in proper washing and rinsing practice in the right direction to optimize the effectiveness of the HW.

None of the respondents dried their hands after washing or closed the tap with the hand towel, a practice recalled by [5]. This bad practice must be corrected by training the care staff.

### **5. Conclusions**

The hospital hand hygiene study provided us with the knowledge, attitudes and practices of HH in general within the Dapaong RH:

- the socio-demographic profile of the respondents shows a young nursing staff dominated by paramedics and men;
- the respondents' level of knowledge was low;
- in their attitudes, they did not respect the basic rules of the HH;
- HW practice was very inadequate.

Hand washing, an inexpensive gesture, its promotion is essential to avoid the transmission of germs and reduce the incidence of infections associated with care.

It is essential to strengthen the capacities of staff on hand hygiene in hospitals.

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## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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## Annex 1: Survey Form (Questionnaire)

***Information and invitation notice.*** We are the nursing students of ENAM Dapaong and we invite you to participate in a study on hand hygiene. Your participation will be very beneficial.

### **PART A. *Identification***

1) Investigation Record N°././

2) Date /.../... /... /

3) Location of Investigation/..... /

4) Age

- 21 to 25years  
 26 to 30 years  
 31 to 35 years  
 36 to 40 years  
 40 years and over

5) Gender

Male  Female

6) Professional category

- Medical Doctor (MD)  Medical assistant (MA)  Nurse (Nrs)  
 Midwife  Orderly  Birth attendants (BA)

### **PART B: Knowledge and attitudes of caregivers on hand hygiene.**

7) Are you familiar with hand washing?  Yes  No

8) If yes, what is your definition?

- Wash hands with soap and water  
 Wash hands with only water

Other to specify:

9) Are there several types of hand washing?  Yes  No

10) If yes, how many types of hand washing exist?

- One  Two  Three

Other to specify:

11) Is hand washing different from simple washing?  Yes  No

12) If so, how does simple hand washing differ from sanitary washing?

- Type of soap and washing time  
 Washing time only  
 Type of soap only

Other to specify:

13) Do you know the soap used for hand hygiene?  Yes  No

14) If so, what type of soap?

- Ordinary soap  
 Antiseptic soap  
 Other to specify:

15) Do you know how the soap is spread?  Yes  No

16) If so, what is the technique?

- Directly on hands without wetting them

After wet hands only

After wet hands and forearm

Other to specify:

**17) Do you know how long it takes to massage your hands with soap?**

Yes  No

**18) If yes which?**

30 seconds 1 minute 2 minutes

3 minutes 4 minutes

Other to specify:

**19) Do you know how hand rinsing is done?**  Yes  No

**20) If so, how?**

From nails to elbows

From elbows to nails

Other to specify:

**21) Do you know the paper towel to use?**  Yes  No

**22) If so, what type of towel?**

Single use  Multiple use

Other to specify:

**23) Do you know what the tap should be closed with?**  Yes  No

**24) If yes with what?**

The bare hand  The hand towel used

Other to specify:

**25) Do you know if jewelry needs to be removed?**  Yes  No

**26) If yes, which ones?**

Even the covenant  All but the covenant

Other to specify:

**27) Is it important to trim your nails?**  Yes  No

**28) Do you know when to wash your hands about the service?**

Only upon arrival at the service

Only when leaving the service

On arrival and departure

Other to specify:

**29) After any septic act, do you know whether to wash your hands?**

Yes  No

**30) If so, which one?**  Simple Hygienic  Without Soap

Other to specify:

**31) Before and after each treatment to a patient, should a wash be done?**

Yes  No

**32) If so, which one?**

Simple hands Hygienic hands

Soap-free

Other to specify:

**33) How many types of hand antiseptics exist?**

One  Two



Other to specify:

**34) Do you know how much antiseptic to put in your hands?**

Yes  No

**35) If yes, how much?**

1 ml  2 ml  3 ml  4 ml  At least 5 ml

**36) Is hand antiseptics required after hand washing?**

Yes  No

**37) Can gloves replace hand washing?**  Yes  No

**38) Do you know why hand hygiene is done?**

Yes  No

**39) If so, why?**

- Only to protect patients from manual infections
- Only to protect personnel from manual infections
- To protect patients and staff from manual infections

Other to specify:

***THIS IS THE END OF THE INTERVIEW, THANK YOU FOR YOUR AVAILABILITY! DO YOU HAVE ANY QUESTIONS OR COMMENTS?***

**ANNEX 2: observation Grid**

**Card Number /..... /**

**Observation made by:**


**Observed Person:**

Doctor  Medical assistant  Nurse

Midwife  Orderly

**Elements related to standard hand washing precautions**

- Wearing jewelry YES /..... / NO /..... /
- Wearing watches in forearm YES /..... / NO /..... /
- Bracelets worn on forearm YES /..... / NO /..... /
- Short finger nails YES /..... / NO /..... /
- Artificial finger nails YES /..... / NO /..... /
- Finger nails without varnish YES /..... / NO /..... /

**Type of care that caused hand hygiene**

- Clinical Review /.....
- Dressing /.....
- Infusion, transfusion /..... /
- Injections (IV, IM, SC) /..... /
- Blood collection /.....
- Eutocial delivery /.....
- Implementation of naso gastric tube, Indwelling Urinary Catheter or Evacuator /.....

- Surgery /..... /
- Physiotherapy /..... /
- Others to specify /..... /

**Type of hand hygiene performed**

- Washing with soap and water YES /..... / NO /..... /
- Hydro-alcoholic friction YES /..... / NO /..... /
- Surgical washing YES /..... / NO /..... /
- Washing with water and soap plus hydro-alcoholic friction YES/...../  
NO/...../

**Hand washing procedure with soap and water**

- Wash hands before care YES /..... / NO /..... /
- Wet hands before soap YES /..... / NO /..... /
- Use of mild soap YES /..... / NO /..... /
- Use of antiseptic soap YES /..... / NO /..... /
- Quantity of product adapts YES/..... / NO/..... /
- Use of brushes YES /..... / NO /..... /
- Rinse thoroughly and thoroughly YES /..... / NO /..... /
- Single Use Hand Towels YES /..... /NO /..... /
- Use of multi-use/collective towels YES /..... /NO /..... /
- Electric hand dryer YES /..... / NO /..... /
- Hand washing time: in seconds..... OR minutes.....
- Hand washing after care YES /..... / NO /..... /