



## KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS HEALTH CARE PROVIDERS REGARDING HAND HYGIENE AMONG ARBA MINCH TOWN, SOUTHERN ETHIOPIA.

TEWODROS FANTAYE NIGUSSIE

Department of Biomedical, College of Medicine and Health Science  
Arbaminch University Arba Minch, Southern Ethiopia  
Email:[tewodrosfantaye11@gmail.com](mailto:tewodrosfantaye11@gmail.com)



### ABSTRACT

**Background:** Hygiene practices are very essential in the avoidance of the infectious disease. It is recognizable in most developing countries including Ethiopia, hygiene preventable diseases are prevalent. These diseases account for eighty percent of morbidities together with other infectious illness including malnutrition. The term hygiene is the practice of protecting oneself and one's environment clean or unsoiled, particularly in order to prevent the spread of communicable diseases like COVID-19 infection. Globally, 2.3 billion people still do not have basic sanitary facilities such as toilet or latrines. Of these 892 million still defecate in the open, in street gutters, behind bushes, or into open water bodies. This study was intended to assess the knowledge, attitude, and practice status of infection prevention among health care providers and to have a better understanding of the possible areas for improving infection prevention strategies and practices in Ethiopia.

**Objective:** To assess the knowledge, attitude and practice towards hand hygiene in Arba Minch town, Southern Ethiopia.

**Methods:** Descriptive cross-sectional study was conducted among health care providers placed in different wards of Arbaminch hospital and health centers situated in Arbaminch town. A self-administered questionnaires containing different types of questions regarding knowledge, attitude and practice on hand hygiene were used for data collection.

**Results:** A total of 98% of the partakers answered that they remained familiar with the world health organization suggested steps of hand washing. The knowledge on hand hygiene was moderate (85%) percent among the total study partakers. Knowledge concerning the least time desired for alcohol based hand rub (20 second) remained well-known correctly by only 56 of the study partakers. A total of 91% of the partakers had positive attitude towards hand-hygiene. A total of twenty nine percent of the correspondents said that they had not been appropriately instructed in hand hygiene during their practice, 58 of the partakers showed good practice regarding hand hygiene and Ninety one percent of realized that the presence of an infection prevention squad in the health care institutions would have positive influences on their hand hygiene practices.

**Conclusion:** Moderate knowledge among majority of health care providers reflected upon their positive attitude and practice concerning hand hygiene. Fundamentally, most of the health care provider's well-thought-out that hand hygiene as an indispensable part of their role. Enhancement of convenience to hand hygiene facilities would play a significant role to advance the compliance to hand-hygiene in this existing time.

**Keywords:** *Knowledge, Attitude, Practice, Hand Hygiene*

## 1. INTRODUCTION

### 1.1.BACKGROUND OF THE STUDY

The term hygiene is the practice of protecting oneself and one's environment clean or unsoiled, particularly in order to prevent the spread of communicable diseases like COVID-19 infection (1). Hygiene practices are very essential in the avoidance of the infectious disease. It is recognizable that in most developing countries including Ethiopia, hygiene preventable diseases are prevalent. These diseases account for eighty percent of morbidities together with other infectious illness including malnutrition (2). Personal Hygiene is the science of healthy living of an individual (3). It has been reported that washing hand with water and soap could reduce the diarrheal and respiratory disease by 44% and 23% respectively (4).

Health care associated infections (HAIs) are the major cause of morbidity and mortality among hospitalized patients contributing 7-10 percent of the hospital admission (5). Effective hand hygiene can lower the prevalence and incidence of poor health care accompanying diseases. Unfortunately, the prevalence of these continues to rise and poses a challenge to health care providers in different setup of health care providing institutions. Health care associated infections due to poor hand hygiene has been linked to un- acceptable high level of morbidity, mortality and health care cost (6). The concept of hand hygiene and anti-sepsis was introduced by Ignel Semmelweis who demonstrated that cleansing heavily contaminated hands with an antiseptic agent between patient contacts may reduce health care associated transmission of contagious disease more effectively than hand washing with plain soap and water (7). Nurses constitute the largest percentage of health care workers (8) and they are considered as the "nucleus of the healthcare systems" (9). Because they spend more time with patients than any other HCWs, their compliance with hand washing guidelines seems to be more vital in preventing the disease transmission among patients. The knowledge, attitude and practice and satisfaction of facilities of health care providers regarding hand hygiene are unsatisfaction. Various studies show the need for further improvement of existing hand hygiene programmes to address the gap in KAP (10, 11).

In the respect, water supply, hygiene and sanitation are highly demanding to lower and avoid the burden of communicable diseases significantly (12). Especially hand hygiene is considered as one of the most important infection control measures since it breaks the transmission of micro-organisms especially in medical center (13,14).

## **1.2.STATEMENT OF THE PROBLEM**

Globally, 2.3 billion people still do not have basic sanitary facility such as toilet or latrines. Of these 892 million still defecate in the open, in street gutters, behind bushes, or into open water bodies. Poor sanitation is linked to transmission of diseases such as cholera, diarrheal diseases, dysentery, hepatitis A, typhoid fever and poliomyelitis, reiterated that inadequate sanitation is estimated to cause 280, 000 diarrhoeal diseases annually and is a major factor in several neglected tropical diseases including intestinal worms, schistosomiasis, and trachoma (15,16).

An early study in India showed that feco-oral and respiratory transmission of diseases are caused by inadequate hand washing practice after interaction with the source of infection. Moreover, the study identified that good hand washing behaviour is associated with better socioeconomic indicators including education of women (17, 18, and 19) especially when the right procedure for hand washing is strictly followed (20).

Communicable diseases which are transmitted and caused by poor personal and environmental hygiene are significant cause of morbidity and mortality worldwide. In the 2009 World Health Organization (WHO) launched the global patient safety challenge: clean care is a safer care campaign. The emanation of severe infections like Severe Acute Respiratory Syndrome (SARS) and re-emerging infectious diseases such as tuberculosis have reiterated the necessity of effective infection control program in all healthcare facilities (21).

The current status of sanitation in African countries like Ghana leaves much to be desired as a result of numerous hygiene related health problems it possess (22). A base line environmental sanitation data gathered in 2007 and 2008 by District Environmental Health Directorates country-wide in Ghana revealed that 76 % of households still rely on improper waste collection and disposal methods, in addition to this improper environmental and personal hygiene could be the main reason for wide range of morbidities and mortalities in entire country (23).

Among the studies undertaken in Ethiopia by Aklilu et al, found that 45 % of the studied food handlers who worked for student's canteen in Addis Ababa University are positive for different intestinal parasites. In that respect, water supply hygiene, and sanitation are highly demanding to lower and avoid the burden of communicable diseases significantly (24).

### **1.3.SIGNIFICANCE OF THE STUDY**

Ascertaining existing infection control knowledge, attitude and practice (KAP) among health care providers and community is a first important step in developing and implementing a efficacious and effective infection control program (25). This study was intended to assess the knowledge, attitude and practice status of infection prevention among health care providers and to have a better understanding of the possible areas for improving infection prevention strategies and practices in Ethiopia.

## **2. OBJECTIVES**

To assess the knowledge, attitude and practice towards hand hygiene in Arba Minch town, Southern Ethiopia.

## **3. METHODS**

### **3.1. STUDY DESIGN**

Descriptive cross-sectional study was conducted from June 01 to July 15, 2020 at Arba Minch town. The total population of the town is estimated to be 100,355. The town is located 460km south of the national capital (Addis Ababa). Its elevation ranges from 1,200 metres above sea level at the northern end and 1,320 metres above sea level at the southern end. The town has

an average temperature 30°C and rainfall of 575mm. There are also two lakes; Lake Abaya at the East and Lake Chamo at the South East of the town.

### **3.2.SAMPLING PROCEDURE**

All health care professionals available at different ward and department of hospitals and health canters were included.

### **3.3.STUDY POPULATION**

Arbaminch town health care providers (Health extension workers, Nurses, Public health officers) were included from different health care institutions.

### **3.4.SAMPLE SIZE**

Totally 234 study participants were involved.

### **3.5.STUDY PERIOD**

From June 01 to July 15, 2020

### **3.6.INSTRUMENTS AND TECHNIQUES**

Semi structured, self-administered questionnaire comprising of questions on knowledge, attitude and practice on hand hygiene. Knowledge was assessed using WHO's hand hygiene knowledge was questionnaire for health care workers which contained 21 questions. Attitude and practice were assessed using another self-structured questionnaire consisting of 10 and 6 questions correspondingly. The respondents were given "Yes" or "No" option to select based on their attitude and practice concerning hand washing. All the questions were subjected to a pre-testing prior to the study and obtained suggestions were taken in to consideration. A scoring system was used where 1 point was awarded for each correct response to knowledge, positive attitudes and good practices. Incorrect knowledge, negative attitude and poor practice were given 0 point. The cut-off value to determine good, moderate, and poor levels were taken from previously published studies with some adjustments to suit our purpose. A score >75 % was considered good, 50%-74% moderate, and <50 % poor

### **3.7.STATISTICAL ANALYSIS**

Data were coded and entered into SPSS-for windows version 20 for analysis

### **3.8.ETHICAL CONSIDERATION**

The Ethics Committee of Arbaminch University, Department of Biomedical Science approved the study protocol and procedures of informed consent before the formal study. Participants had to answer a yes-no question to confirm their willingness to participate voluntarily. After confirmation of the question, the participant was directed to complete the self-report questionnaire.

## **4. RESULTS**

### **4.1.SOCIO-DEMOGRAPHIC CHARACTERISTICS**

A total of 234 study partakers were participated in the study. Of which 234 partakers had completed both the questionnaire measurements making the response rate of 100 %. Of which 62 % were male. Majority of the participants are Health science students (79%) had received training about environmental and personal hygiene including the broad concept of hand hygiene.

### **4.2.KNOWLEDGE TOWARDS HAND HYGIENE**

The knowledge of hand-hygiene was moderate (201 out of 234, 86%) among the total study participants. 12% of participants (29 out of 234) had poor knowledge and 2% had good knowledge. The response of partakers concerning prevention of transmission of germs to the patients, could be done by adopting hand hygiene at different times: before touching the patient (92%), immediately after a risk of body fluid exposure (92%).

On the other hand the response of participants for the prevention of transmission of micro-organisms to the health care providers may possibly be done by hand hygiene action were identified as: after touching the patient (85%), instantaneously after a risk of body fluid exposure (89%). A fact to be noted is the correct knowledge regarding the minimum time needed for alcohol based hand rub (20 sec) was known properly by only 24% of participants.

67% of correspondence identified hand rubbing as a more rapid method for hand cleansing than hand washing. 46% of the participants notorious hand washing as a more effective method as hand rubbing.

Most of participants remained aware that wearing jewellery, damaged skin, artificial fingernails are accompanying with increased likelihood of colonization of hand with harmful germs.

**Table 1. Knowledge about Hand Hygiene Arba Minch, Southern Ethiopia, 2020.**

No	When does you prefer to wash your hand?	N=234	%
K1	Before touching the patient	210	90
K2	Immediately after a risk of body fluid exposure	208	90
K3	After exposure to the immediate surroundings of a patient	76	32
K4	Immediately before a clean/aseptic procedure	188	80
K5	After touching the patient	200	85
K6	Immediately after a risk of body fluid exposure	208	90
K7	Immediately before a clean/aseptic procedure	54	23
K8	After exposure to the immediate surroundings of a patient	172	74
	Regarding hand rubbing and use of disinfectants mark Yes/No		
K9	Minimal time needed for alcohol based hand rubs (20 sec)	56	24
K10	Hand rubbing is more rapid for hand cleansing than hand washing	56	24
K11	Hand rubbing causes skin dryness more than hand washing	100	43
K12	Hand rubbing is more effective against germs than hand washing	108	46
K13	Hand washing and hand rubbing are recommended to be performed in sequence	40	17
K14	What is the minimal time needed for alcohol-based hand rub to kill most germs on your hands(20 sec)	54	24
	Based on justifications below choose mark Rubbing/Washing/Both		
K15	Before palpation of the abdomen	70	30

K16	Before giving an injection	30	13
K17	After emptying a bedpan	168	72
K18	After removing examination gloves	224	96
K19	After making a patient's bed	40	17
K20	After visible exposure to blood	160	68
K21	Wearing jewelry	212	91
K22	Damaged skin	216	92
K24	Artificial fingernails	80	34

#### 4.3. ATTITUDE TOWARDS HAND HYGIENE

The response of the study partakers to attitude based questions revealed that their attitude towards hand hygiene was satisfactory. Majority of the participants (90%, 210 out of 234) had positive attitude towards hand-hygiene. 74% of the partakers adhered to correct hand hygiene practice at all times and 96% answered that they promote others to participate in hand hygiene all the times. Though, 52% answered that occasionally they had more important things to do than hand hygiene and 84% responded that Emergencies and other primacies make hygiene more difficult at times. Notably, 29% of the correspondence believed that when they were in enrolled in medical school, they had not been properly instructed in hand hygiene during their practice.

*Table 2. Attitude about Hand Hygiene Arba Minch, Southern Ethiopia, 2020.*

	Questions (Based on justifications below choose Yes/No)	N=234	%
A1	I stick to correct hand hygiene practices at all times	174	74
A2	I have sufficient knowledge about hand hygiene	188	80
A3	Sometime I have more important things to do than hand hygiene	122	52
A4	Emergencies and other priorities make hygiene more difficult at times	196	84
A5	Wearing gloves reduce the need for hand hygiene	102	46
A6	I feel frustrated when others omit hand hygiene	124	52
A7	I suggest others to engage in hand hygiene	68	84
A8	When I am enrolled in medical school school I have not been properly instructed in	68	29
A9	I feel guilty if I omit hand hygiene	166	71
A10	Practicing hand hygiene technique is easy in the current setup	194	83



#### 4.4.PRACTICES TOWARDS HAND HYGIENE

On investigating the hand-hygiene practice among the participants most of them showed good hand hygiene practices (56%, 132 out of 234). Similarly, 38% (88 out of 234) had moderate practices and 6% (14 out of 234) exhibited poor practice regarding hand-hygiene. 97% of the participants felt that hand hygiene was an indispensable part of their role. However 52% agreed that they occasionally squandered out hand hygiene simply because they disremembered it. 91% comprehended that the presence of an infection prevention team would have positive influences on their hand hygiene practices. Display of posters, pamphlets for infection prevention would remind all to do hand hygiene was agreed upon by 85%. Likewise, 28% of the partakers felt that it was problematic for them to be present hand hygiene courses due to time pressure to update their knowledge regarding hand hygiene.

*Table 3. Practice about Hand Hygiene Arba Minch, Southern Ethiopia, 2020.*

	Questions (Based on justifications below choose Yes/No)	N=234	%
P1	Sometime I miss out hand hygiene simply because I forget it	122	52
P2	Hand hygiene is an essential part of my role	226	97
P3	Practicing hand hygiene for each patient makes it difficult for me to carry it out as often as necessary	110	94
P4	Infection prevention team would have a positive influence on my hand	214	85
P5	Infection prevention posters, pamphlets remind me to do hand hygiene	66	28

#### 5. DISCUSSION

Hand hygiene is the greatest imperative tool in preventing the hospital acquired infections as the hand of healthcare workers including nurses, if they are not following the strict rules about hand washing would be common mode of transmission of micro-organisms to patients. Poor access to hand washing accommodations like sinks, irritant contact dermatitis accompanying

with recurrent acquaintance to soap and water, the adequate time required to accomplish standard hand washing, high workload, knowledge-deficit among health care providers and failure of administrative leaders to make hand hygiene an institutional priority are the negatively influences that contribute to poor adherence to hand-hygiene (6). It is essential to carry out training packages on hand hygiene frequently for health care workforces as it has remained associated with increased compliance to hand hygiene practices and lessening of infection. (26, 27) It is very much vital to in still correct knowledge, good attitude and correct practice concerning hand hygiene throughout the period of primary training of all health care workers. In this study majority of the participants were found to have moderate knowledge on hand hygiene which is definitely a positive finding. This result is in agreement to the comparable study conducted in Sri Lanka and India. (10, 11) Custom of alcohol-based hand rub solutions or gels has been shown to be effective for hand antisepsis. But in this study only 24% of the participants knew that 20 seconds is the minimum time required for effective hand hygiene as recommended by the WHO guidelines (21). This finding is analogous to a study conducted in India where majority of the partakers didn't know the minimum time required for effective hand hygiene by alcohol based hand sanitizers (11). This study reveals that most nursing students (90%) have a positive attitude towards hand-hygiene. This finding reveals a better scenario in the context of our country as a similar study conducted in Raichur, India reported that majority of the students had poor attitude towards hand hygiene (29). In this study 20% of the partakers felt that they didn't have adequate knowledge on hand hygiene. This elucidates the need to conduct the training sessions to accentuate on the methods and importance of hand hygiene prior to their hospital placements. The good level of knowledge could not be completely translated into practice as only 56% displayed good hand hygiene practices thereby showing a wide gap between knowledge and practice of hand hygiene. In order for the students to develop good practices regarding hand hygiene, it is imperative to make correct hand hygiene facilities accessible. When these students are facing circumstances demanding urgent patient care, they are more likely to forget hand hygiene practices when facilities are not easily accessible to them. Increasing the supplies necessary for hand washing and institutional support is essential in combating substandard practices in hand hygiene. Thus it is recommended a quantitative measure of hand hygiene facilities be done to better access the available resources and necessary improvements be made accordingly.

## 6. CONCLUSIONS

This study shows that knowledge regarding hand hygiene is moderate among health care professionals of Arba Minch town, southern Ethiopia, of which accounted for their positive attitude and good practice in health care settings. Hospital acquired infections constitute one of the paramount challenges of contemporary medicine and most of the partakers considered that hand hygiene was an essential part of nurses' role in order to diminish the risk of Hospital acquired infections. This study also highlights the importance of regular training sessions regarding hand hygiene practices among health care professionals to provide the current and updated knowledge in the area of nosocomial infections and prevention of infections at large. Also, there is need for easy accessibility to correct hand hygiene facilities in hospital settings in order to improve the compliance of health care professionals to hand hygiene. The result of this study can provide essential starting point facts about infection control practices in a resource limited countries and highlight some of the barriers to implementing effective infection control mechanisms.

## 7. RECOMMENDATIONS

Based on the finding of the study the following measures are recommended:

- The local administration should focus on and encourage access to information for people in rural areas.
- The health education programs should be continued in uncompromising and intensified way both in rural and urban community.
- The Federal Ministry of Health and local should uphold Hand Hygiene related facts evidences about Knowledge, attitude and practice, especially via TV/radio and social Media.
- Religious leaders should be teaching the believers by interacting with faith and science on the means of preventing different pandemics caused by poor personal hygiene.
- For Individuals: Every individual should apply and follow the government's (Federal Ministry of Health) directions to control the distribution of the pandemic.
- For Researchers: Further study on KAP toward Hand Hygiene and its associated factors with multiple measurements is needed to expand upon and resolve these issues.

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## COMPETING INTEREST

The author declare that there is no competing interest.

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