Handwashing practices among health workers

BACKGROUND

Hand washingorhand hygieneis the process of cleaning one’s hands with or without the use of water or another liquid, or with the use of soap for the purpose of removing soil, dirt, and/or microorganisms.

Handwashing involves five simple and effective steps; Wet, Lather, Scrub, Rinse and Dry. Regular handwashing, particularly before and after certain activities, is one of the best ways to remove germs, avoid getting sick, and prevent the spread of germs to others. It’s simple, it’s quick, and it can keep us all from getting infected (CDC, 2016).

The provision of healthcare worldwide is always associated with a potential range of safety problems. Yet, despite advances in healthcare systems, patients remain vulnerable to unintentional harm in hospitals (Devnani et al. 2011; Mani et al. 2010). One of the most significant, current discussions in healthcare delivery in hospitals is healthcare associated infection (HAI), sometimes called hospital acquired infection (Mani et al. 2010; Momen & Fernie 2010) or nosocomial infection, which is ‘ any infection that a person develops as a result of treatment in hospital’ (Minnaar 2008, 2).

Nosocomial infection is a global public health problem with an estimated 1. 5 million suffering consequences at any given time [WHO, 2009] noted that at least 25% of all hospital infections in the developing world are nosocomially acquired. The hands of health care providers are major agents of infection transmission in hospitals leading to the campaign to improve hand hygiene, Clean Care is Safer Care [WHO, 2005]. Two types of hand colonizing flora are predominant in hand skins. These are the Resident flora that are not easily

removed by the simple friction associated hand washing and the Transient microorganisms which are not usually hand colonizers but they are most likely associated with infection [Grayson, 2009]. Various types of such microbes are found on patients, instruments and other items and are important in infection transmission [Hubner, 2006]. Improper hand washing practices serve as means of infection transmission in hospital wards (Duckro, 2005).

Hand hygiene was thought to be a key factor in reducing hospital acquired infection during the initial development of healthcare systems (Akyol 2007; Ott & French 2009). The battle with HAI started when the Hungarian obstetrician, Semmelweis (1847), observed that puerperal fever was more common on a maternity ward, where physicians and medical students provided care to women in labour, than it was on the ward where midwives assisted deliveries. He noted that physicians and medical students were contaminating their hands while performing autopsies and later attending the examination of women without hand washing. Arguably, he was the first to recognise the importance of hand washing in controlling the transmission of infection (Akyol 2007; Meers et al. 1992; Trampuz & Widmer 2004). Equally important was the work of Florence Nightingale during the Crimean war, when she called for basic public health in a military hospital in Scutari in 1854.

PROBLEM STATEMENT

Hospital acquired infections has resulted in many negative impacts on health workers, patients and families over the world (WHO2012). The working

environment, health workers and patients are the main reservoirs of hospital acquired related infection (weber, 2013).

The transmission of infection from patient to patient mainly occurs at the hands of health workers (Ellingson K, 2014). The hands of health professionals are contaminated during patient care on a daily bases despite wearing gloves (Kendal A, 2012).

Handwashing is critical in the prevention of hospital acquired infections. It is a very simple procedure and work well in the prevention of diseases as people are the carriers of pathogenic microbes. The practice is however unacceptably low among health workers (Takahashi & Turale 2010; Trampuz & Widmer 2004).

Hand hygiene compliance rates in different developed countries rarely exceed 50% (Mani et al. 2010; Maxfield & Dull 2011; Ott & French 2009). For instance, figures show that in the USA it is 50%, in Switzerland 42% and in the UK 32% (Takahashi & Turale 2010). Hence, poor compliance has resulted in high morbidity and mortality. In the USA, there are between 1. 7 and 2 million people who contract HAI and 88 to 99 thousand deaths are attributed to HAI annually. Furthermore, HAI affects nearly 10% of hospitalised patients and presents major challenges in healthcare facilities. Consequently, annual medical expenses have increased in the USA to approximately $ 4. 5 billion (Maxfield & Dull 2011; Smith & Lokhorst 2009; Trampuz & Widmer 2004).

Hand hygiene practice among HCWs is considered to be the single most clinical and cost effective measure to prevent HAI, a view recognised internationally (Momen & Fernie 2010; Ott & French 2009; Takahashi &

Turale 2010). The World Health Organisation (WHO) strongly emphasise the essential need for hand hygiene during healthcare delivery, to avoid possible infection and subsequent complications; hence, the ‘ Clean Care is Safe Care’ programme, launched by WHO in 2005 as part of the ‘ First Global Patient Safety Challenge’. This programme offers new guidelines on hand hygiene training, observation and performance reporting in healthcare settings.

Out of every 100 hospitalized patients, at least 7 in high-income and 10 in low-/middle-income countries will acquire a healthcare-associated infection. Among critically ill and vulnerable patients in intensive care units, that figure rises to around 30 per 100 (who, 2014).

Factors that contribute to poor hand washing compliance include absence of hand washing sinks, time required to perform hand hygiene, patient’s condition, effect of hand-hygiene products on the skin and inadequate knowledge of the guidelines(Larson and Kretzer, 1995; Simmons *et al* ., 1999; Meengs *et al* ., 1994; Doebbeling *et al* ., 1992; Voss and Widmer, 1997).

PURPOSE OF THE STUDY

The purpose of this study is to determine the knowledge, attitude, and practices of healthworkers and also compare between healthworkers regarding their knowledge, attitude, and practices on hand washing.

MAIN OBJECTIVE

To determine hand washing practices among health workers in the Tamale West Hospital.

SPECIFIC OBJECTIVES

1. Assess the knowledge, practices and attitudes of healthworkers on handwashing
2. Assess the differences across age groups, gender and experience regarding KAP of handwashing
3. Compare between healthworkers regarding KAP of handwashing
4. Assess the availability of resources for handwashing

RESEARCH QUESTIONS

1. What is the knowledge, practices and attitudes of healthworkers concerning handwashing?
2. Are there differences across age groups, gender and experience regarding KAP of handwashing?
3. Can KAP between healthworkers regarding handwashing be compared?
4. Are there available resources for handwashing?

SIGNIFICANCE OF THE STUDY

Hand washing is considered the most important single and simple practice for preventing hospital acquired infection. An intricate problem may be caused by a number of factors if there is failure to practice effective hand washing. Understanding the factors that influence this behavior is key to change the behavior of poor effective hand washing practices.

More studies are needed to identify, which of the factors contribute significantly to the problem of poor compliance with hand washing recommendation.

OPERATIONAL DEFINITION OF TERMS

Hand washing

- Hand washingis the process of cleaning one’s hands with or without the use of water or another liquid, or with the use of soap for the purpose of removing soil, dirt, and/or microorganisms.

Health care workers

- Professional personnel working in clinical setting of a health facility

Veronica buckets

- Buckets used to store water for washing of hands

Nosocomial infection/hospital acquired infection are infections gotten from the hospital setting.

LITERATURE REVIEW

KNOWLEDGE, PRACTICES AND ATTITUDES OF HEALTHWORKERS ON HANDWASHING

Hand hygiene practice among HCWs is considered to be the single most clinical and cost effective measure to prevent HAI, a view recognized globally. Despite the relative simplicity of this procedure, adherence to hand washing recommendations is unacceptably low, usually well below 50% (Ekwere & Okafor, 2013). Most nosocomial infections are thought to be

transmitted by the hands of health care workers. It has long been known that hand hygiene among health care workers plays a central role in preventing the transmission of infectious agents. Hand-washing (HW) is the most effectiveway of preventing the spread of infectious diseases But despite a Joint Commission requirementthat Centers for Disease Control and Prevention hand hygiene guidelines be implemented in hospitals, compliance among health care workers remains low The reasons for low compliance to hand hygiene have not been defined in developing countries probably due to limited studies on hand hygiene. Factors that contribute to noncompliance to HW among health careworkers are: lack of awareness and knowledge among health care workers as regard the importance, techniques, methods and quality of hand hygiene (Abd El Aziz & Bakr, 2009).

Alex-Hart and Opara, (2011) study on hand washing revealed that, more than halve (55. 4%) of the health workers lacked the knowledge of good hand washing technique as most believed it involved the use of soapy water in a basin. This may be due to the fact that running water is not readily available, so the use of soapy water in a basin may have been the available alternative. With its repeated use over time, most health workers may have come to perceive it as the ideal hand washing technique.

The NMC’S Code of Standards and Conduct requires nurses and midwifes to provide a highstandard of practical care all the time. Yet, the momentum for hand hygiene, some nurses are still presenting with low compliance because they perceive it as not their problem, that it is something to do with infection control staff and they have to deal with it . Furthermore, Nazarko (2009) indicates that nurses often fail to practise hand hygiene because they are

busy and they feel hand hygiene takes up precious time. In addition, nurses often perceive that gloves can be used as an alternative to hand hygiene. They usually tend to remove the gloves without washing their hands or use the same gloves to deliver intended care to multiple patients. Even when they remove their gloves, only 20% of nurses actually clean their hands (Ott & French 2009). According to Canham, (2011) nurses avoid hand hygiene because they are frightened that skin problems such as dermatitis could develop, especially with alcohol hand-rubs.

DIFFERENCES ACROSS AGE GROUPS, GENDER AND EXPERIENCE REGARDING KAP OF HANDWASHING

Nurses tend to wash their hands more often than doctors and among non-health care workers, females tend to wash their hands more often than males. This study examined the influence of gender on the hand washing rates of health care workers (HCWs). The null hypotheses were that, there would be no inter-gender difference in either hand washing rates in healthcare workers across professions, or within professional groups. Although increased compliance with hand washing protocols has been shown to decrease infection rates, hand washing compliance remains poor, particularly among some professional groups. Studies of hand washing frequency have recorded hand washing rates following patient contact ranging from 10. 6% to 61%, and significant differences have long been noted in hand washing frequency between professional groups such as nurses and doctors. (Van de Mortel, 2001)

Van de Mortel, (2001) studies again found out found that, registered nurses (RNs) washed their hands following patient contact significantly more often than doctors in the Intensive Care Unit (ICU). The RNs washed their hands 71% percent of the time, whilst junior and senior resident doctors (RMOs) washed their hands 50% of the time and specialists washed only 25% of the time. He postulated that, failure to wash hands may be a gender-related phenomenon. The proportion of female nurses is considerably higher than the proportion of female doctors. In the above study, 90% of the nurses were female; 45% of RMOs and 6% of specialists were female. (Van de Mortel, 2001). Several studies have examined, among other variables, the influence of gender on hand washing frequency in health care workers however; these studies arrived at conflicting conclusions. Van de Mortel, (2001) found that hand washing frequency in the emergency department was lower among female nurses, RMOs and specialists than among males within each of those groups, however, the sample size of the study was small (n = 13 nurses, 11 RMOs, and 11 specialists).

In contrast, in an extensive study of hand washing practices in two countries, it revealed that female health care workers were washing their hands more frequently than males, regardless of occupational group. However, this study was based on self-reported practices collected by questionnaire, and a degree of bias may have been introduced due to the fact that non-responders may have exhibited different behavior than responders. There is also a tendency for people to overestimate socially desirable behavior when answering questionnaires. To illustrate the latter point, Van de Mortel, collected data on hand washing frequency among doctors, both by means of

questionnaires and by covert observation. He found that doctors estimated that they washed their hands 73% of the time, but the data collected by covert observation showed the percentage of doctors washing their hands following patient contact was in fact only 10. 8%.

METHODOLOGY

This chapter describes the study area, the study design, the study population and the sampling procedure as well as the recruitment of respondents and the data collection procedure. The data entry and analysis is also outlined in this chapter.

RESEARCH DESIGN

This study is a cross-sectional study method designed to assess the knowledge, attitude and practices of health workers in TTH towards handwashing. Including assessing the differences across age groups, gender and experience regarding knowledge, attitude and practices of handwashing, and also, compare between healthworkers regarding KAP of handwashing

RESEARCH SETTING

The study will be conducted at the Tamale Teaching Hospital (TTH). It is a foremost tertiary referral centre providing patient care to residents of Tamale and neighboring towns and cities. There are 30 wards in Tamale Teaching Hospital. There are 74 doctors and 655nurses at the hospital. Hand-washing facilities are located in all the wards and clinics in the hospitals. Each ward is provided with at least a Veronica bucket for hand

washing, running tap water, soap (liquid or cake) and sometimes, a towel for hand drying.

TARGET POPULATION

This study targets the clinical staff of the Tamale Teaching Hospital with a total population of 729. There are 31 wards in Tamale Teaching Hospital

SAMPLE, SAMPLE SIZE, AND SAMPLING TECHNIQUE

The sample size is 360 respondents this was arrived at by the using Cochran formula.

- Sample Size = $^{[z2 * p(1-p)] / e2}$ / $_{1 + [z^{2} * p(1-p)] / e^{2} * N]}$
    - N = population size
    - z = z-score
    - e = margin of error
    - p = standard of deviation

N= 729

Z= 1. 96 (using 95% confidence interval)

E= 0. 05

P= 0. 5

Sample size = $^{[(1. 96)2*0. 5(1-0. 5)]/0. 052}$ / 1 + [1. 96 ^{2} *0. 5(1-0. 5)]/0. 05 ^{2} * N

Sample size = 384. 16/1. 076

Sample size= 357

An extra 3 was added to make it a total of 360 respondents. There are 30 wards in the hospital. 12 respondents would be sampled from each ward if they are eligible for the study.

INCLUSION CRITERIA

Respondents must be registered healthcare workers in the Tamale Teaching Hospital.

EXCLUSION CRITERIA

Medical, nursing and other clinician students are excluded from this study.

DATA COLLECTION TOOL

A well-structured questionnaire will be used to collect socio-demographic data, knowledge on handwashing from the respondents.

PROCEDURE FOR DATA COLLECTION

Probability sampling technique will be used. This is to help get an equal proportion of participants from the various wards used. The data collection will employ the use of structured questionnaire which respondents will check and will also give short answers to some questions to solicit data from respondents. All the wards will be successfully visited on a daily basis to get eligible participants for the study. These wards will be visited on a daily bases recruiting respondents until the last questionnaire is administered.

The wards in the Tamale Teaching Hospital include;

Purposive sampling will be used to select clinicians from the hospital who will be available during the data collection from Tamale Teaching Hospital.

The study data will be collected based on the socio-demographic characteristics of respondents, general knowledge about handwashing, assess the differences across age groups, gender and their experiences regarding handwashing through the use of a structured questionnaire administered by the research assistants with minimal clarification from the research assistants. Primary data will be collected and used in the analysis.

DATA ANALYSIS

The data will be coded in excel and then entered into SPSS V. 16 for analysis. Responses will be assigned codes in the form of numbers, which will make it easy for keying in the responses into a computer format. Univariate analysis will be done for socio-demographic characteristics of respondents and also for areas that require only descriptive statistics. Bivariate analysis will be performed to find associations or relationships between socio-demographic characteristics and level of knowledge, attitudes and practices of clinicians on handwashing. Likert item was rated on a 1-5 response scale; where strongly agree= 5, agree-4, neutral= 3, disagree= 2, strongly disagree= 1. The scores were graded into positive, neutral or negative.

ETHICAL CONSIDERATIONS

Ethical approval to use the hospital was from the Ethics and Research Committee of the hospital. Formal consent will also be obtained from the respondents prior to administration of questionnaire. Individual participants

will be told that the study is purely for academic purpose and names as well as addresses will not be and also needed assuring them of their privacy and confidentiality. Respondents were also told that they had the right not to participate in the study.

LIMITATIONS OF THE STUDY

The cost and inexperience of researchers in conducting this study will be a challenge. Also, bias in the sampling procedure can also occur.

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