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HAND HYGIENE PRACTICE AMONG HEALTHCARE WORKERS AT THE SURGICAL ORTHOPEDIC WARDS OF JARAMOGI OGINGA ODINGA TEACHING AND REFERRAL HOSPITAL, KENYA

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HAND HYGIENE PRACTICE AMONG HEALTHCARE WORKERS AT THE SURGICAL ORTHOPEDIC WARDS OF JARAMOGI OGINGA ODINGA TEACHING AND REFERRAL HOSPITAL, KENYA

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ABSTRACT

Background: Hand hygiene practice is the most-simple and cost-effective way to prevent Hospital Acquired Infections. However, limited audit exists on the adherence to hand hygiene practice by healthcare workers in surgical orthopedic wards of a referral hospital in Western Kenya.

Objective: evaluate adherence level to hand hygiene practice in the surgical orthopedic wards at a referral hospital.

Design: descriptive cross-sectional survey.

Setting: Surgical orthopedic wards in Jaramogi Oginga Odinga Teaching and Referral Hospital.

Subjects: 31 healthcare workers employed at the hospital.

Results: Among 7 doctors and 24 nurses, 39% agreed there was constant running water in the wards, 45.2% agreed there was constant supply of hand wash soap and 16% agreed there was evaluation and provision of feedback of hand hygiene practice. Only 12.9% agreed on the availability of hand sanitizer in and out of the rooms. Twenty six percent and 13% reported stock out of sanitizers and occasional dry taps respectively. However, 22.6 % agreed of washing hands before and after attending to a patient. Notably, 61% reported taking care of many patients as a barrier to hand hygiene practice. Doctors and nurses take care of twice and thrice respectively as many patients as recommended by World Health Organization. Water for hand wash was more available than hand sanitizer (P=0.006).

Conclusion: Several challenges for effective adherence to hand hygiene practice exist and more emphasis needs to be put on staffing, strengthening infection control manuals and exploring a complementary use of soaps and sanitizers for sustainability in poor resource settings.

INTRODUCTION

With high prevalence of HIV and increased road injuries in western Kenya, the number of patients in surgical orthopedic wards is alarming ⁽¹⁾. As a result, there is a potential for Hospital Acquired Infections (HAIs). Hand hygiene reduces HAIs and CDC recommends that, doctors and nurses should practice hand hygiene at main points in time to interrupt the transmission of disease-causing agents ⁽²⁾. It should be practiced before touching the patient, after contact with blood, body fluids, or contaminated surfaces ⁽³⁾. In addition, it should be practiced before invasive procedures; and after removing gloves ⁽³⁻⁵⁾. In the United States, the admitted patients contract about 722,000 infections every year, which is about one infection for every twenty-five patients. Out of the number admitted about 75000 patients died due to the infections they acquired during the period of hospitalization ⁽⁶⁾. However, in low and middle resource countries, the risk of developing HAIs ranges between two to twenty times higher than in the developed countries ⁽⁷⁾. This may be an underestimate of the real situation given that no study has focused on surgical orthopedic wards.

The impact of HAI translates to increased length of hospital stay, longstanding disability, increased resistance of disease causing agents to antimicrobials, huge extra financial burden, high costs for patients and their families, increased mortality rates and also disrupts the function of family unit ⁽²⁾. Moreover, these infections are fatal and

difficult to treat and therefore preventing their occurrence through simple practice of hand hygiene is highly recommended in clinical practice ⁽⁸⁾. The use of alcohol-based hand rub (sanitizers) by health care workers is preferred for all other clinical situations ^(9, 10). Also use of soap, running water and sanitizers are recommended in hand hygiene practice ⁽²⁾. In addition, every health care worker should be trained about the right indications of hand hygiene ⁽⁹⁾. Other strategies of promoting adherence to hand hygiene include staff motivation through rewarding compliance, administrative sanctions of noncompliance ⁽¹⁰⁾. Compliance can be assessed preferably through observation by a trained observer who should be unknown and not to be on the unit where they work in order to reduce conflict of interest. This should be followed by feedback either positive or negative concerning compliance rate; the less compliant cadres or units should be identified in order to provide training for improvement. Despite the clear guidelines on maintaining safe HCW hands, several challenges still exist that frustrate the practice. A study in Kenyan hospitals indicated that 86% of the hospitals had running water 73% had soap for hand wash and 32% had hand sanitizers for hand rub ⁽¹¹⁾. Despite the surgical orthopedic wards being a potential site of transmission, no investigation has been carried out to find out the challenges to the adherence to hand hygiene practice by health care workers.

MATERIALS AND METHODS

Design: This was a descriptive cross-sectional study design that involved purposive sampling method to recruit the study participants. Data was collected through a self-administered questionnaire.

Study site: The study was performed at the surgical-orthopedic wards of JOOTRH in Western Kenya. Each ward has a bed capacity of 49; female ward admits both adults and children while male ward admits adults only. The cases for admission are general surgery, orthopedic surgery, ear nose and throat surgery, burns and dental surgery. Ethical approval was obtained from the Ethical Review Committee at JOOTRH.

Subjects: A total of 31 health care workers consisting of 7 consultants and medical officers, and 24 nurses participated in this study

Data collection and analyses: Data sets were entered into password protected Microsoft Access database and later exported to Social sciences statistical package (SPSS version 13)

for analyses. Descriptive statistics were used for the analyses and results presented in form of frequency and percentage tables. A p value below 0.05 was considered significant.

RESULTS

Out of 34 study participants (doctors = 8; nurses = 26) a total of 31 filled and returned questionnaires. This was an overall return rate of 91.2% comprising 24 nurses and (92.3%) and 7 doctors (87.5%) respectively.

Constant running water and availability of hand washing soap

Out of the 31 respondents, 14 (45.2%) strongly agreed there was constant running water for hand wash, 12 (38.7%) agreed, 1 (3.2%) somewhat agreed, 4 (12.9%) disagreed and 0 (0.0%) strongly disagreed. Regarding availability of hand washing soap, 7 (22.6%) strongly agreed that there was constant supply of soap, 14 (45.2%) agreed, 5 (16.1%) somewhat disagreed, 4 (12.9%) disagreed and 1 (3.2%) strongly disagreed (Table 1).

Table 1

Availability of running water and soap

Hand hygiene practice	Strongly disagree	Disagree	Somewhat disagree	Agree	Strongly agree
	n (%)	n (%)	n (%)	n (%)	n (%)
There is constant running water in the ward	0 (0.0)	4(12.9)	1 (3.2)	12 (38.7)	14 (45.2)
There is constant supply of hand washing soap in the ward	1 (3.2)	4 (12.9)	5 (16.1)	14 (45.2)	7 (22.6)

Availability of hand sanitizer inside and outside the patients' rooms

The study sought to know if hand sanitizer was available inside and outside patients' rooms. Out of the 31 respondents 1 (3.2%) strongly agreed sanitizer was available inside and outside patients' rooms, 4 (12.9%) agreed,

5 (16.1%) somewhat disagreed, 13 (41.9%) disagreed and 8 (25.8%) strongly disagreed. The difference of those agreed on the availability of soap (45.2%) and sanitizer (12.9%) is highly statistically significant ($P = 0.006$). On the study participants washing their hands before and after being in contact

with a patient; 7(22.6%) strongly disagreed, 8 (25.8%) disagreed, 4 (12.9%) somewhat disagreed, 7(22.6%) agreed and 5 (16.1%) strongly agreed suggesting very limited wash of hand after being in contact with a patient (Table 2).

Table 2
Availability of hand sanitizer and hand washing by staff

Hand hygiene practice	Strongly disagree n (%)	Disagree n (%)	Somewhat disagree n (%)	Agree n (%)	Strongly agree n (%)
Hand sanitizer is available inside and outside the patients' room	8 (25.8)	13 (41.9)	5 (16.1)	4 (12.9)	1 (3.2)
I wash my hands before and after every patient care contact	7 (22.6)	8 (25.8)	4 (12.9)	7 (22.6)	5 (16.1)

Hand hygiene practice and evaluation feedback

The study sought to know if there was evaluation of hand hygiene practices in the surgical-orthopedic wards; 5 (16.1%) strongly agreed, 2 (6.2%) agreed, 6 (19.4%) somewhat disagreed, 9 (29.0%) disagreed and 9 (29.0%) strongly disagreed. Also, sought to know if feedback was provided after evaluation, 2 (6.4%) of the respondents of strongly agreed,

6 (19.4%) agreed, 3 (9.6%) somewhat disagreed, 9 (29.0%) disagreed and 11 (35.5%) strongly disagreed. The staff however, was aware of indications for hand hygiene: 25 (80.7%) strongly agreed they were aware, 5 (16.1%) agreed, 0 (0.0%) somewhat disagreed, 1 (3.2%) disagreed and 0 (0.0%) strongly disagreed (Table 3).

Table 3
Evaluation of staff hand hygiene practices

Hand hygiene practices	Strongly disagree n (%)	Disagree n (%)	Somewhat disagree n (%)	Agree n (%)	Strongly agree n (%)
There is routine evaluation of hand hygiene practices	9 (29.0)	9 (29.0)	6 (19.4)	2 (6.2)	5 (16.1)
Feedback is always given after the evaluation	11 (35.5)	9 (29.0)	3 (9.6)	6 (19.4)	2 (6.4)
I am aware of the indication for hand hygiene	0 (0.0)	1(3.2)	0(0.0)	5(16.1)	25(80.7)

Staffing

The study sought to know the number of doctors in the surgical orthopedic wards. There were 12 doctors: 3 (25%) general surgeons, 2 (16.7%) orthopedic surgeons, 1 (8.3%) ENT surgeon, 1(8.3%) pediatric

surgeon, 2 (16.7%) dental surgeons and 3(25%) medical officers (Figure 1). The study sought to know the number of nurses by qualification, in the surgical orthopedic wards. There were 23 (82.14%) Kenya Registered Community Health Nurses and 5

(17.86%) enrolled community nurses in the surgical orthopedic wards ($p=0.0001$). The difference in the proportion is highly statistically significant (Figure 2).

DISCUSSION

In an effort to prevent the transmission of HAIs, our study provides an important self-report from our key health care workers as regards to; supply of constant-running water, soap for washing hands, availability of hand sanitizer in and out of patient rooms for hand hygiene practice in a surgical-orthopedic wards at a referral hospital. The wards serve general, orthopedic, ear nose and throat surgeries, burns among others the potential for transmission of infections to patients or health care workers. The findings show inadequate supply of running water, limited availability of soaps and sanitizers. The finding of our study is inconsistent with that of Mwinga ⁽¹¹⁾ that reported 86% supply constant water at main referral hospital in Kenya. Other inconsistency is reported on the availability of soap for washing hands, which is 73% and our study reports 45.2%. The inconsistencies suggest a need for more studies or improvement of the study design.

The study further points out the possible effect of understaffing on the health care provision, indeed, understaffing is not only a problem in Kenya but elsewhere too ⁽¹²⁾. As self-reported by the health care workers in this study, understaffing makes it impractical to adhere to the standard of hand wash before and after being in contact with a patient. The ratio of doctor to patient in our study site was 1: 10,000 while the WHO recommends 1: 5000 whereas nurse patient ratio was at 1: 15 yet WHO recommends 1: 5 ^(2, 13-15). In surgical-orthopedic wards, ratio of health care workers to patients should be given further

consideration given that both health care worker and patient are exposed to infections. Furthermore, given that understaffing is a real concern in most of poor resource settings, it is then imperative that evaluation is carried out to come up with the possible solutions to avoid compromising the essential care services.

According to majority of the health care workers in the hospital, hand hygiene practice in the surgical orthopedic wards is not evaluated and therefore no feedback is ever given even though the findings of Yazaji ⁽⁹⁾, recommend that this should be observed to promote quality of health care. It is therefore imperative that the establishment of vigilance by the Infection Prevention committee in the hospitals is evaluated to improve on not only hand hygiene practice but also quality of other essential health care. More importantly, an active vigilance committee can ensure that all new staff go through an induction session on prevention of Infection based on WHO or ministry of health guidelines ⁽¹⁶⁾.

CONCLUSION

The finding demonstrates that understaffing contributes to poor adherence to hand wash and hygiene in the surgical orthopedic wards, even though 80.7% strongly agreed they were aware of the indications of hand hygiene. Also, there should be an effort to ensure that soap and sanitizers complement each other for sustainable hand wash and hygiene practice.

Our study reports limited attention on the adherence to hand hygiene in the surgical orthopedic wards in a referral hospital in Kenya and recommends that improvement on staffing to avoid non-adherence of hand hygiene practice due to many patients, strengthening of vigilance by the Infection

prevention committee and explore complementary use of soaps and sanitizers to ensure sustainable hand hygiene practice in poor resource settings.

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