



ASSESSMENT OF KNOWLEDGE AND ATTITUDE OF HEALTHCARE PROVIDERS TOWARDS POSTOPERATIVE INFECTIONS OF PATIENTS ADMITTED TO SURGICAL WARD AT PUBLIC HOSPITALS IN MEKELLE TOWN, TIGRAY, ETHIOPIA, A CROSS SECTIONAL STUDY

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Abstract: Background: Postoperative infections contribute to morbidity and mortality of surgical patients, increased healthcare costs and longer hospital stays. Globally, standard precautions of infection control are considered an effective means of protecting healthcare workers, patients and the public and reducing nosocomial infections. The objectives of this study were to assess the knowledge and the attitude of healthcare providers towards post-operative infections of Patients Admitted to Surgical Ward at Public Hospitals in Mekelle Town, Tigray, Ethiopia. An institution based cross-sectional study was conducted and data were collected through the administration of structured questionnaire on 114 health care providers selected by simple random sampling technique. Data were collected for five days. Data was gathered by trained health care providers whom were selected by their data collection experience. Two supervisors were selected to check the data during collection. After data was collected on participants' knowledge and attitude through the administered questionnaire, each participant's response was graded out of hundred, then the result was grouped accordingly and analysed by SPSS.

Result: Out of a total of 114 respondents, 75(65.8%) were male. Fifty-five (48%) of health care providers were in the age group of 26-35. Sixty (52.6%) were married. Concerning the work experience of health care providers 74 (65%) were degree holders. Fifty three (46.4%) had moderate knowledge and 83.3% had a positive attitude towards postoperative infection.

Conclusion and Recommendations: Although the majority of respondents had moderate knowledge and positive attitude towards postoperative infections, strengthening and integrating universal precaution with the routine services through provision of training and preparing and introducing healthcare workers to infection prevention standard of practice, protocol, rules, regulation and opportunities to promote the desired team spirit at all health facility levels are recommended.

Key words: Healthcare providers, Knowledge, Attitude, Postoperative infection

Introduction: Surgery is an essential component in healthcare. Complications such as surgical wound infection, urinary tract infection, respiratory tract infection, blood stream infections, and gastrointestinal infections account significantly for morbidity and mortality among patients after surgery. These complications in sub-Saharan Africa settings are mainly anaesthesia and infection related [1]. Considering the impact of the postoperative infections it became necessary to establish a quantitative data on its prevalence in Mekelle hospital, Ethiopia.

Nosocomial (hospital acquired) infection is an infection that was absent (neither symptomatic nor incubatory) in patients on his/her admission to hospital. When the infections status on admission is unknown, a delay after admission of at least 48 hours or longer than the incubation duration when it is known is commonly accepted to distinguish it from a community acquired infection [2].

Hospital Acquired Infections are the most challenging problem in all healthcare systems [3]. Such infections after surgical procedures can cause pain, poor wound healing, further treatment with antibiotics, increased healthcare costs, longer hospital stays and increased morbidity and mortality [3, 4]. It is also recognized as a public health problem world-wide with a prevalence rate of 3.0-20.7% [5] and an incidence rate of 5-10% in tertiary care hospitals [6]. In developed countries nosocomial infections represent from 5%-10% of total hospitalizations. In the US, estimates range from 25,000-100,000 deaths per year as a result of nosocomial infections, which represents a yearly burden of over 7.5 billion dollars [7]. In developing countries all over the world, especially in Africa, large numbers of people are dying on daily basis of preventable and curable diseases due to inadequate

healthcare services and PO hospital acquired infections which constitute a large proportion of this burden [8].

Factors underlying nosocomial POIs are multiple and include the type of surgical procedure, the skills of the surgeon, the duration of surgery and the underlying diseases of the host [9]. Age is considered an important factor, with neonates and the elderly at particular risk of infection [10]. The current study aims to assess the knowledge and attitude of healthcare providers towards post-operative infections and attempts to draw information that helps for the implementation of a better infection prevention practice in public Hospitals.

Hospital acquires infections are the most challenging problems in all healthcare systems [3]. In developed countries this infections account for 5-10% of the total hospitalization. It accounts for 25,000-100,000 deaths per year in the US and this represents a yearly burden of over 7.5 billion dollars [7].

In developing countries especially Africa, this figure is expected to be high for obvious reasons of healthcare system and other socio-economic factors. Despite the fact that it is almost impossible to completely rule out postoperative infection, when the rate of occurrence becomes too high then it is apparent that certain factors need to be considered and necessary effort made to bring down the rate to the barest minimal.

Nosocomial infections, including surgical site infection, still form a large health problem and contribute substantially to patient morbidity, mortality, prolonged hospital stay, expensive hospitalization and prolonged therapy [4].

Most post-operative wound infections are hospital acquired and vary from one hospital to the other and even within a given hospital and they are associated with increased morbidity and mortality [30].

Post-operative infections may be aggravated by failing to follow aseptic procedure of healthcare provider starting from pre-operative to rehabilitation which may be either directly or indirectly associated with lack of knowledge, negligence or negative attitude of health care providers towards postoperative infection.

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Therefore assessing knowledge and attitude of healthcare providers towards post-operative infection will help to determine the possible recommendations and reduce the possible risk of morbidity and mortality secondary to post-operative infections. So this study will help reducing the gap related to this manner. Considering the impact of hospital acquired infections on the health outcome of the patient, and the overall treatment expenses on the hospital itself, it became necessary to assess it's the knowledge and attitude of healthcare providers regarding post-operative infections in our setting so as to have a concrete data on our actual experience with respect to hospital acquired infections. This will then guide both the healthcare provider and the patients on how to minimize this hospital acquired infections and consequently reducing its impact on both the patients and the healthcare provider (hospital).

Methods and Materials: Institution-based cross sectional study design was conducted from April to July 2016 at public hospitals in Mekelle, Tigray region, northern Ethiopia. All healthcare providers who are working under Public hospitals in Mekelle town were the source and a sampled eligible healthcare providers with six months and above work experience of surgical ward in their respective public hospitals were the study population. All Healthcare providers who have had six months and above work experience in surgical ward in their respective public hospitals were included in the study. Sample size was calculated at P. value of 50% (0.5), expected margin of error (d) is 0.05 and the confidence interval ($z_{\alpha/2}$) is 95% $n = \frac{(Z_{\alpha/2})^2 p (1-p)}{D^2} = 384$

Since the population was less than 10,000 finite population correction formulas was applied: $nf = 384$

$1 + (384/146)$, $nf = 109$ adding 5% non-response rate the total sample size is 114.

Dependent variable: Attitude of HCP

Independent variable Age, sex, religion, knowledge, profession, Policy work experience, training, socio-cultural issue, salary, workload. Data were collected for five working days using

a structured self-administered questionnaire developed by the investigators guided by the research objectives bay reviewing different literatures having similar objectives to this study. The questionnaires were administered to the participants by the trained data collectors. Five percent of the questionnaire was pre-tested, the content of the questionnaire was explained to the data collectors and they were trained on how to collect data. Supervision was done during the data collection process. After data were collected on participants' knowledge and attitude through the questionnaire administered, each participant's response was graded out of hundred as follows: for knowledge;

- >70=Good knowledge
- 50-70=Moderate knowledge
- <50=Poor knowledge

For Attitude; ≥ 50 =Positive attitude (Positive attitude is when a respondent disagrees with a negative question and agrees with a positive question). And <50 =Negative attitude (Negative attitude is when a respondent agrees with a negative question and disagrees with a positive question). SPSS version 16 were used for data entry, cleaning and analysis purposes. Letter of ethical clearance was obtained from the ethical committee of Sheba University College; a letter of permission to carry out the study was written and sent to the public hospitals.

Presentation of Results

Socio-demographic characteristics: Out of a total of 114 respondents, 75(65.8%) were male. Fifty-five (48%) of HCPs were in the age group of 26-35. Sixty (52.6%) were married. Concerning the work experience of HCPs 74 (65%) were degree holders (Table 1).

Table 1: Socio-demographic characteristics of knowledge and attitude of healthcare providers towards post-operative infection (n=114).

<i>Sex of respondents</i>		
Characteristics	Frequency	Percentage
Male	75	65.8
Female	39	34.2
<i>Age in group (years)</i>		
20-25	26	22.8
26-35	55	48.2
>35	33	29

<i>Marital status</i>		
Married	53	46.4
Single	60	52.6
Widowed	1	1
<i>Educational status</i>		
Diploma	14	12
Degree	89	78
MD	11	10
<i>Work experience (years)</i>		
<1	10	9
1-5	74	65
6-10	22	19
>10	8	7

Attitude of health care providers: Out of a total of 114 respondents, 83% had a positive attitude towards postoperative infection (fig 3).

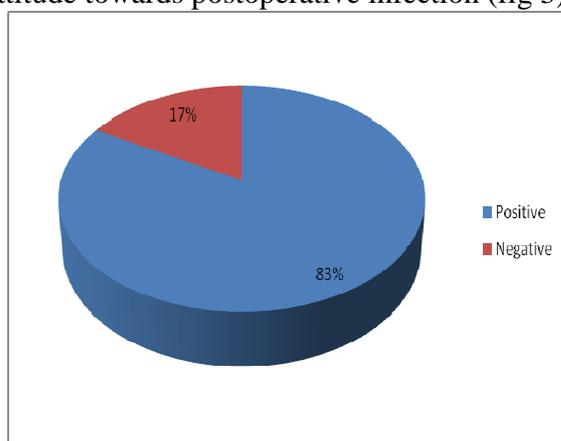


Fig.3: Attitude Of Health Care Providers On Knowledge And Attitude Of Healthcare Providers Towards Post-Operative Infection (n=114).

Knowledge of health care providers: Out of a total of 114 respondents, 53(46.4%) had moderate knowledge. (Table 2)

TABLE 2: Knowledge of healthcare providers knowledge and attitude of healthcare providers towards post-operative infection (n=114).

Variable	Frequency	Percentage
Good	50	46.4
Moderate	53	44
Poor	11	9.6

Discussion of Results: In Ethiopia, there are few studies on postoperative infections. This study contributes to determine knowledge and attitude of healthcare providers towards

postoperative infection at public hospitals in Mekelle.

Regarding the educational status of the respondents, about 78% of them had degree which shows that the health care providers have the basic and essential training and knowledge required for the provision of standard health care to clients and patients. Seventy-four 65% of the healthcare providers have had 1-5years experience. This shows that they are quite familiar with clinical procedures including surgery.

About 46.4% of the HCPs had good knowledge towards postoperative infections. When compared to the report of a study done in Egypt that reported 32.5% of healthcare providers having good knowledge towards postoperative infection, the knowledge of the HCPs would be considered not sufficient, favorable, and safe enough to the expected standard. A study done in Southwest Ethiopia also found that majority of the HCPs knowledge were not sufficient and only 42.2% think that they apply standard precaution always. Another study done in Egypt also found out that knowledge scores were low to moderate among all participants and only 32.5% had a high level of knowledge. With respect to hospitals in Mekelle there is still need for increase knowledge of postoperative infections among healthcare providers. This will help them take precautionary measures to reduce the prevalence of postoperative infections. In addition to the findings in this study and the work done in Egypt, in 2006, Bamigboye and Adesanya in Obafemi Awolowo University Teaching hospital Osun state Nigeria reported low awareness of postoperative infections among healthcare providers. On the contrary, Abubakar et al 2014 reported a much higher knowledge (88.8%) among Healthcare providers in Federal medical centre Gombe state, Nigeria which show an increase within a period of eight years.

The attitude of the HCPs as shown in this study (83%) is quite lower as compared with that of a study done in Egypt which found that 96.6% of the participants had a positive attitude towards infection control measures.

Conclusion and Recommendation: Although the majority of respondents had moderate knowledge and positive attitude towards postoperative infections, it is not sufficient enough to say that more training on infection control measures by the health institutions is not necessary. Therefore strengthening and integrating universal precaution with the routine services through provision of training and preparing and introducing healthcare workers to infection prevention standard of practice, protocol, rules, regulation and opportunities to promote the desired team spirit at all health facility levels are recommended.

The HCPs also need to take more seriously their personal capacity building by acquiring more knowledge through personal study of articles and current texts in order to update their information on clinical procedures.

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