

PRACTICE OF PRE OPERATIVE SCRUBBING AT PRIVATE HOSPITALS IN ABBOTTABAD

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ABSTRACT

BACKGROUND: Scrubbing is a term used to describe the process of hand and forearm decontamination required by surgical team prior to commencing any surgical or invasive procedures. 5-10% of patients in developed and 25% of patients in developing countries acquire hospital acquired infections.

This study is conducted to know the frequency of pre-operative scrubbing in private hospitals of Abbottabad.

METHODS: This cross-sectional study was conducted from 4th May, 2015 to 12th July, 2015.

Data was collected from randomly selected 10 private hospitals of the city. All the Operation Theatre doctors and paramedical staff members who gave consent were included in this study. A total of 60 study participants were selected through non-probability convenient sampling. A self administered questionnaire was used. Data was analyzed using SPSS.

RESULTS: Out of 60 participants at 10 different private hospitals, all were following pre operative scrubbing protocols. Majority of study participants washed hands for a minute. Availability of soap was confirmed by all but one individual.

CONCLUSION: All private hospitals were observing pre operative scrubbing protocols, however on individual levels, there were some discrepancies.

KEY WORDS: Surgical Scrubbing, Pre operative, Private hospital.

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INTRODUCTION

Hospital acquired infections are a major cause of death and disability worldwide. 1.4 million Peoples worldwide suffer from infectious complications associated with health-care.¹ WHO estimates that 5-10% of patients admitted to hospitals in developed countries acquire hospital acquired infections, and in developing countries the proportion effected can exceed 25%.²

Surgical hand antisepsis of surgical staff is a standard procedure used worldwide in order to reduce the risk of surgical site infections.³Surgical

hand preparation in 19th century was done by washing hands with antimicrobial soap and warm water with use of a brush.⁴Total bacterial count on hands of a medical personal *have* ranged from 3.9×10^4 to 4.6×10^6 cfu/cm^{2,5}.

“Scrubbing” or “Scrub” is a term used to describe the process of hand and forearm decontamination required by the surgical team prior to commencing for any surgical or invasive procedure.⁶The surgical scrub is a systemic washing of the hands and forearms and scrubbing of finger nails using especially developed techniques and the most

effective antibacterial cleansing agent available.⁶The hands can be a portal and transmitter of infections. While hand washing maybe the simplest way to control infection, there are some rules that must be followed, for controlling infections, which are called as protocols. The contribution of the surgical scrub is critical in reducing the incidence of operative wound infections.⁷

The procedure for the scrub timed five minutes consists of:

1. Remove all jewelry (rings, watches, bracelets)
2. Wash hands and arms with antimicrobial soap. Excessively hot water is harder on skin and dries the skin
3. Clean subungual areas with a nail file
4. Scrub each side of each finger, b/w the fingers and the back and front of hand for 2min
5. Scrub arms keeping hand higher than the arms
6. Wash each side of arm to three inches above elbow for one minute
7. Rinse hands and arms by passing them through water in one direction only.⁷

In preparation for scrubbing, personal cleanliness is extremely important for the operating theatre personnel. A daily shower, frequent hand washing and attention to hands and finger nails are most important.⁶

Different studies have shown that surgical hand antiseptics have definite impact on surgical infection rate.⁴The hands of health care workers are the primary mode of transmission of multidrug pathogens and infections to patients.⁹

The reason for poor hand hygiene practices include lack of scientific knowledge, unawareness of risks, misconceptions (e.g. glove use obdurate the use for hand hygiene), in availabilities of hand hygiene facilities (sinks or alcoholic dispensers), lack of role models among colleagues or superior understaffing or patient overcrowding and lack of institutional priority.¹⁰

Proper hand hygiene can prevent health care associated infections and spread of antimicrobial resistance. Antimicrobial resistance prevalence rates are increasing in many countries around the world.¹¹

Multiple in vitro and in vivo experiments have indicated considerably better antimicrobial killing with alcohol hand disinfectant than with hand washing. The use of alcohol based hands rub has been associated with decrease in nosocomial infection rates.⁹ The hand should be wet with an alcohol based rub during the whole procedure, which require 15ml depending upon the size of the hands. One study demonstrated that keeping the hand wet with rub is more important than volume used.¹²

Plain soaps failed to remove pathogen from hand. Alcohol used are ethyl alcohol, isopropyl alcohol, N- propanol are used containing 60-90% concentration having germicidal activity against Gram positive and negative, Mycobacterium TB, Fungi, Herpes simplex, HIV, Hepatitis B virus, HCV.¹¹

Surgical hand antiseptics with medicated soaps require clean water to reuse the hands after application of medicated soaps. Pseudomonas species are isolated from taps/towels in hospitals.¹³

Hospital acquired infections are a major cause of morbidity and mortality. Many of these infections especially in operated patients can be prevented by following preoperative protocols of surgical hand scrub Procedure. When a surgeon opens up human body he introduces into many infections not only from the environment but also through the hands he uses, the infections can later cause many complications. Nosocomial infections in operated patients are preventable by surgeons by proper hand washing and wearing gloves. The rate of Nosocomial infection after surgery in private hospitals is very high and is persistently on the increase. The purpose of this study is to see what exactly the cause of increased infection rate is. We want to see whether the standard protocols are being followed by surgeons preoperatively in private hospitals.

In this study the doctors, nurses and paramedics of 10 private hospitals that were randomly selected, were assessed whether they observed scrubbing pre operatively or not.

MATERIAL & METHODS

This cross-sectional study was conducted from 4th May, 2015 to 12th July, 2015. All doctors and paramedical staff related to Operation Theatre (OT) were included in this study.

Randomly selected 10 private hospitals in Abbottabad city were approached. A non probability convenient sampling was done achieving a sample of 60 individuals. A self administered questionnaire was used to collect data from study participants. For data analysis, SPSS version 20 and MS Excel 2007 were used. The names and identity of doctors and staff members is not disclosed. Ethical approval was granted by Women Medical College.

RESULTS

We conducted a survey in Abbottabad to assess the hand hygiene status and surgical protocols followed by different Private Hospitals and identify the cause of spread of nosocomial infections in such setups. A total of 10 Private Hospitals were selected for the purpose, with the results thus obtained are as under:

DISCUSSION

Hospital acquired infections are the major cause of disability world wide. In Pakistan they are considered as the most pressing health threats and are major cause of morbidity. Surgical site infections are studied worldwide but are given less emphasis and are also studied less in developing countries like Pakistan.

Proper surgical hand antiseptic can reduce this risk as hands are the portal transmitter of infections. These infections can be controlled by a simple and easy way as handwashing. The WHO has proper protocols of pre surgical handwashing and scrubbing following which will greatly reduce the risk of surgical acquired infections.

The Private hospitals in Abbottabad have been found to have knowledge of hand washing and scrubbing and they all believed that by following proper protocols the incidence of hospital acquired infections can be reduced.

The proper duration recommended for hand washing is 60 seconds. According to our study, 45 out of 60 individuals in private hospitals were using proper duration of hand washing i.e. 20 to 60 seconds. This result is quite similar to the study in which overall mean of hand washing time was 49.8 sec.¹⁴

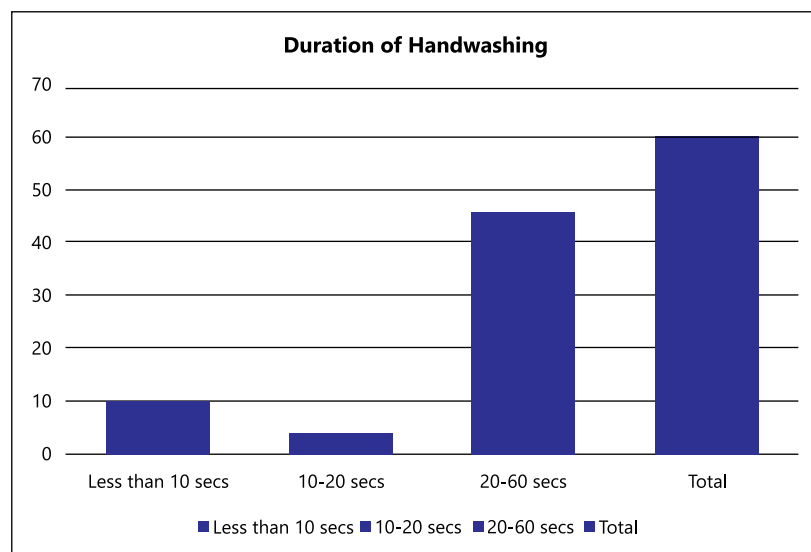


Figure 1:

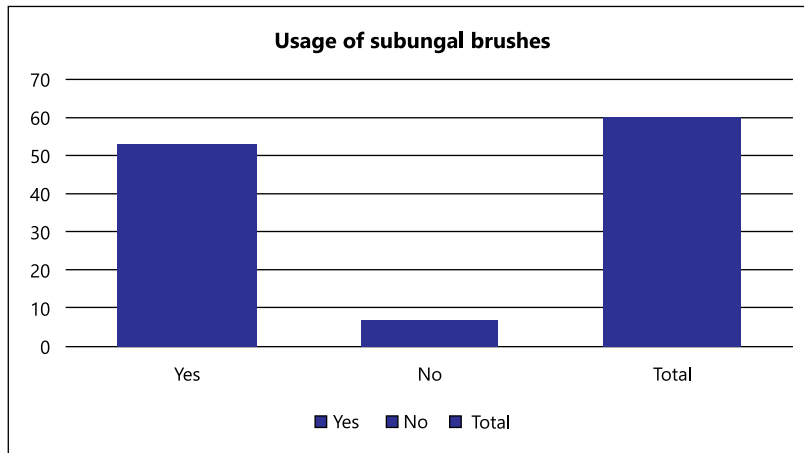


Figure 2:

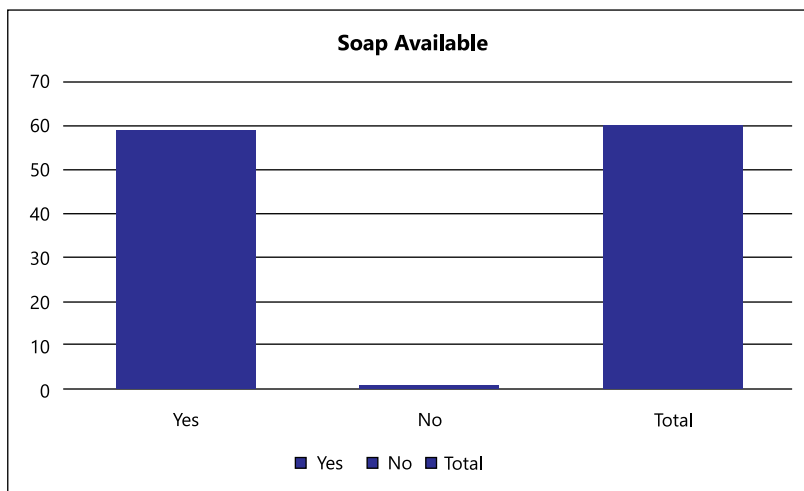


Figure 3:



Figure 4:

As far as use of subungual brushes is concerned, all hospitals were following this, but only 9 individuals were not using this which is quite in contrast to many of the studies conducted like the one in which 16.8% used brush for nail only and 9.4%

used brush for hands and arms.¹⁴

A study conducted by Mortimer in newborns and another study conducted by Philips which shows that hand hygiene must be performed before and after touching the patient.^{15,19}

Surgical hand antisepsis should be performed using either a suitable antimicrobial soap or suitable alcohol-based handrub, preferably with a product ensuring sustained activity, before put on sterile gloves.^{20,27} Hand hygiene product which is ideally used is alcohol rub which was used scarcely according to our study.

Soaps were available in almost all hospitals and towels were not used. All the health personnels. Hand Hygiene is the most important step to prevent transfer of microorganism in the hospital settings.

CONCLUSION

Though pre operative scrubbing is mostly observed by health care workers in private hospitals, there should be written protocols everywhere in the hospitals and hospital administration should make it mandatory. Supply of materials like antiseptic solutions and brushes etc should be ensured. Periodic workshops on pre-operative scrubbing needs to be arranged.

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CONFLICT OF INTEREST

Authors declared no conflict of interest

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NIL

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.