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Research Article

KNOWLEDGE AND PRACTICES OF NURSES REGARDING SURGICAL SCRUBBING IN OPERATION ROOMS

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Abstract:

Introduction: Nurses among other healthcare providers work at the frontline to manage different concerns of patients. Therefore the want of basic knowledge and reflexes regarding personal hygiene, sterilization and infection control can undermine the wellbeing of the patients. This study is undertaken and aimed to assess the knowledge and practices of nurses regarding surgical scrubs. **Methods:** This cross-sectional survey-based study was conducted among 100 nurses enrolled through convenient sampling working in different units of Jinnah Hospital Lahore using a self-structured questionnaire during June 2021 to September 2021. The questions were drafted from the guidelines and protocols of the American Association of Surgical Technologists Standards of Practice for Surgical Attire, Surgical Scrub, Hand Hygiene, and Hand washing. **Results:** Most of nurses correctly identified the constituents of surgical scrub attire e.g. surgical gown (92.0%), shoe cover (97.0%), head cover (93.0%), and masks (99.0%). 84.0% of nurses knew about the prohibition of wearing the surgical scrub outside the operation room, 82.0% demonstrated the correct method of putting on the personal protective equipment, only 61.0% recalled the permissible areas of hospital for carrying surgical scrubs. It was observed that despite having sufficient knowledge regarding scrubbing technique there was an evident lack of adopting such practices in professional lives. 65.0% of the nurses responded that they did not seek any formal education on scrubbing. Inconvenience (79.0%) was listed as most common causative factor for the lack of compliance. **Conclusion:** Despite having adequate background knowledge regarding donning and doffing of surgical scrubs the majority of the nurses were unable to comply with the practices in their professional lives. It was also observed that around 2/3rd of the subjects did not attend any formal training or workshop regarding infection control. Through guideline directed protocols, regular ward teaching rounds and health directed seminars surgical scrub practices can be encouraged to combat the burden of nosocomial infections in developing world.

Keywords: Surgical Scrubs; Infection Control; Nurses; Knowledge and Practices**Corresponding author:****Sana Kanwal Mumtaz,**

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INTRODUCTION:

Nosocomial infections are a leading cause of morbidity, mortality, and psycho socioeconomic burden [1] [2], prolonged hospital stay [3] [4], and the evolution of multidrug-resistant pathogens [5]. Indwelling devices and catheters as well as surgical procedures and contaminated environment have a preponderance of hospital acquired infections poses an imminent threat to the patients as well as the health care providers [6] [7] [8]. Surgical scrubs serve as a defensive shield for healthcare workers and is an essential equipment to maintain sterile environment of the operating room. The concept of utilization of surgical scrubs as a testimonial to halt the spread of infection in sterile areas was undermined in the early 1900s as various studies endorsing the likelihood of dwelling and transporting various pathogens inside the scrubs [9].

Latest observations have encouraged the compliance of health-friendly protocols inside operation rooms regarding the safe use of surgical scrubs [10] [11] [12]. The recommended use of surgical scrubs can alleviate the risk and protect the patients and the healthcare team from the surgical associated and nosocomial infections [13] [14] [15].

Nurses being the frontline workers of the health provision team can act as launching pads for the hospital acquired pathogens by carrying them along the ill-fitted, faulty worn and improper disposal of the surgical refuse and personal protective equipment [9] [16]. Therefore by developing and enforcing zero-tolerance standard operating protocols regarding surgical scrubbing in the hospital infection control policy we can identify and prevent the spread of the hazardous nosocomial outbreak through proper compliance and feedback mechanisms.[17] [18] [19] [20], this study is aimed to ascertain the knowledge and practice of nurses regarding surgical scrubs.

METHODS:

This cross-sectional survey-based study was conducted among 100 nurses enrolled through convenient sampling after informed consent working in different units of Jinnah Hospital Lahore using a self-structured questionnaire during June 2021 to September 2021. The study and questions were drafted from the guidelines and protocols of the American Association of Surgical Technologists Standards of Practice for Surgical Attire, Surgical Scrub, Hand Hygiene, and Hand washing validated by the ethical committee of the institute. Privacy and confidentiality of the subjects was maintained at every level during the study [21].Data was entered and analyzed using

SPSS 21. A p-value of <0.05 was considered significant.

RESULTS:

A total of 110 nurses were interviewed out of which 100 provided complete information and consent. 36 (36.0%) were males and 64 (64.0%) were females. Of these, 76 (76.0%) were living inside hospital allotments, and 24 (24.0%) were living outside hospital premises at private dwellings.

Knowledge:

The results reflected that almost all the participants possessed a sound knowledge regarding the correct identification of the constituents of surgical attire including surgical scrub suit (92.0%), shoe cover (97.0%), head cover (93.0%), and mask (99.0%). Regarding the practical utility of surgical scrub, the response of the participants awareness is as shown below: Surgical scrubs: 84.0% of nurses knew about the prohibition of wearing the surgical scrub outside the operation room, 24.0% demonstrated the correct method of donning of surgical scrubs, only 61.0% recalled the permissible areas of hospital for carrying surgical scrubs.

- 1) **Protective gowns:** 86.0% of the nurses were aware that a protective gown ought to be worn over surgical scrubs before leaving the procedure room; 24.0% demonstrated the correct method of putting on the personal protective equipment (i.e knots at 3 ends).
- 2) **Laundering:** 83.0% of the nurses were aware that surgical scrubs should be segregated and washed in hospital allocated laundry area.
- 3) **Shoe Covers:** 76.0% of nurses correctly recalled the appropriate color code for disposal bins and which side of shoe cover to be worn inside and outside respectively of while 78.0% of nurses knew to change the shoe covers as soon as possible if contaminated.
- 4) **Masks:** (91.0%) of nurses knew the correct side and position of the masks on the face and 82% were aware to change the mask immediately if soiled.

Practices:

It was observed that nurses had faulty practices in using cover gown and shoe covers. Of 86% nurses who agreed to wear the cover gown when existing the operation room, only 24.0% of them wore it in the recommended way with 3 knot around the back and waist. While 76.0% of the nurses correctly identified

between white outside and blue inside of the shoe covers, only 33% were appropriately switching between the two sides. 62.0% of the nurses were using the surgical scrubs as sleeping suits, and 32.0% forget to change into a new pair of scrubs before their shift change in the operating room.

The results revealed that 65.0% of nurses did not attain any formal training/educational demonstration regarding surgical scrub use. 23.0% reported that they have learnt through posters and dress code hospital policy and instructions displayed in various corridors and operating rooms of the hospital. 12% nurses stated that they were just imitating their seniors and colleagues at the workplace regarding usage of the surgical scrubs.

The most common causative factors for the difference in knowledge and practice of the scrubbing are listed as inconvenience (79.0%), inappropriate scrub sizes (14.0%), and the fear of theft from changing room (7.0%) contributed to unsafe practices by the nurses.

DISCUSSION:

It is observed that the nurses possessed adequate knowledge related to identification of surgical scrubbing however the practical knowledge and utilization of its key components was deficient. Majority (65.0%) of nurses did not attain any formal training/educational demonstration regarding surgical scrub use which proved to be the main culprit in the translation into their practices. The nurses carried on with their instincts and gestures passed down passively through their seniors and colleagues or through their undergraduate curriculum. Similar results were observed from the studies conducted neighboring countries like India and China. Students possessed adequate knowledge regarding sterile surgical attire, however, their insight and comprehension decreased significantly when asked about the details [22] [23] [24].

Our study was congruous to the one conducted in India that revealed that majority of the nursing students were not cleansing their contaminated uniforms regularly [10].

According to the studies conducted in Brazil and United Kingdom highlighted that the nurses expressed dissatisfaction over their past learning regarding infection control [26] [27]. These results were consistent with the fact that a single teaching session was not to curb the deficit in the practical knowledge and there must be refreshing hands on courses to

emerge as active learners rather than learning faulty practices from their colleagues [24] [28] [29]. This highlighted the fact that instilling good practices was more beneficial than just imparting knowledge. Inconvenience was listed as the leading cause of non-compliance. All reputed institutions should take the lead in identifying the probable causes of this behavior. The practical solution to this issue lies in upgrading the teaching methodology and inculcating the hazards of inappropriate and unsafe scrubbing procedures and its potential implications of nosocomial infections on the patient and the hospital attendants. A goal oriented campaign must be run by setting posters carrying instructions in bold letters of how to don and doff the surgical scrub especially in the operating rooms hospital corridors and nurseries. A feedback mechanism must be executed via objective testing in their curriculum.

CONCLUSION:

Nurses possessed sound knowledge regarding surgical scrubs and its individual components but expressed deficit in its practical utilization especially its no-zone and permissible territory. Unfortunately a careless and shy trend was observed in the conversion of their basic knowledge into their professional practice. The rationale of our study is to identify, suggest and curb the deficits of this behavior. The unanimous advice would be to integrate internationally accepted standard operating procedures in the nursing curriculum and the evaluating their practices through a objectively structured feedback algorithm. Secondly a coherent hospital policy need to be legislated via input from all the relevant stakeholders to establish zero-tolerance infection control measures. Bold instruction should be displayed around every corner of the facility so that every member of the healthcare team becomes well-versed with the guidelines and hence reduce the bulk of nosocomial infections.

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