



Knowledge and awareness of cross-infection control among undergraduate and postgraduate students: A cross-sectional study

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Abstract

Introduction

Cross-infection is the transfer of harmful microorganisms among a group of people through the equipment in a clinical setup. Dental students and practitioners are prone to high-risk infections such as AIDS, HBV, tuberculosis, as they have been exposed to blood, aerosols, and needle pricks. Patients coming to dental hospitals are at high risk as teeth are lost due to various conditions like periodontitis.

Infection control among undergraduate and postgraduate students should be assessed as they work in a closed environment. Proper measures like wearing gloves, masks, protective eye wear, use of sterile instruments, washing hands before and after changing the gloves should be followed.

Objectives

- To assess awareness of cross-infection among undergraduates and postgraduate students.
- To assess knowledge and practices of cross-infection control measures between undergraduates and postgraduate students.

Methodology

A cross-sectional study utilizing a questionnaire was given to undergraduate and postgraduate students to assess their knowledge of cross-infection.

A structured questionnaire based on cross-infection has been distributed among 105 participants in dental departments to ensure its clarity and content validity. 103 submitted the filled questionnaire. Participants' demographic information, knowledge, and attitude responses have been evaluated using descriptive analysis.

Results

Except a few areas, over 80% of students showed enough understanding of various aspects of sterilization and cross-infection. Undergraduate students are less likely to have accurate understanding of various aspects of cross-infection compared to postgraduate students.

Most postgraduate students had positive attitude towards different aspects of sterilization or cross-infection.

Conclusion

Concerning most aspects of cross-infection and sterilization, a lot of undergraduate and graduate students were well-informed and supportive. However, they require sufficient education or training in certain areas, including sterilization methods, sterilized instruments storage, and standard precautions.

Keywords: Cross-infection, Sterilization, Aerosols, Prevention.

Introduction

Cross-infection is the transfer of harmful microorganisms among a group of people through the equipment in a clinical setup. Dental students and practitioners are prone to high-risk infections such as AIDS, HBV, tuberculosis as they are exposed to blood, aerosols, or needle pricks. Patients coming to dental hospitals are at high risk as teeth are lost due to various conditions like periodontitis and caries.

Infection control among undergraduate and postgraduate students should be assessed as they work in a closed environment. Proper measures like wearing gloves, masks, protective eye wear, use of sterile instruments, washing hands before and after changing the gloves should be followed.

Instruments utilized for invasive clinical procedures, such as flap surgery, are reprocessed and cleaned before each usage to avoid the spread of germs between individuals and the environment, hence protecting patients and healthcare personnel. Insufficient reprocessing and sterilization of these devices in healthcare settings increases the risk of healthcare-associated infections. These infections can extend a patient's hospitalization, lead to long-term disabilities, raise financial burden on healthcare systems, increase expenses for patients and their families, and result in fatalities.

Healthcare staff must have appropriate knowledge regarding various aspects of sterilization and the reuse of surgical equipment to ensure effective sterilization of reusable devices and prevent cross-infection.

This study presents the results of a cross-sectional survey evaluating knowledge and perspectives of undergraduate or postgraduate students on the sterilization and reuse of surgical tools in the clinical departments of Drs. Sudha & Nageswara Rao Siddhartha Institute of Dental Sciences.



Methodology

Cross-sectional questionnaire survey will be undertaken among undergraduate and postgraduate students to assess their understanding of sterilization and cross-infection.

A structured questionnaire based on cross-infection has been distributed among 105 participants in dental departments to ensure its clarity and content validity. 103 submitted the finalized questionnaire. Participants' demographic information, knowledge, and attitude responses have been subjected to descriptive analysis.

Research has been performed in online databases such as Google Scholar, Medline, as well as PUBMED to identify studies examining knowledge or perspective of undergraduate or postgraduate students regarding sterilization and cross-infection control across various departments.

After evaluating feedback from respondents and knowledge obtained in field, the questionnaire has been modified or finalized.



Sample design and Sample size

The research has been a part of thorough analysis intended to assess knowledge and awareness towards sterilization and cross-infection among undergraduate and post graduate students. The students included in this study were primarily from clinical departments of Drs. Sudha & Nageswara Rao Siddhartha Institute of Dental Sciences. Therefore, structured questionnaire was distributed among 105 students, and the distribution of the survey questions was carefully crafted to prevent bias among students.

Data collection procedure

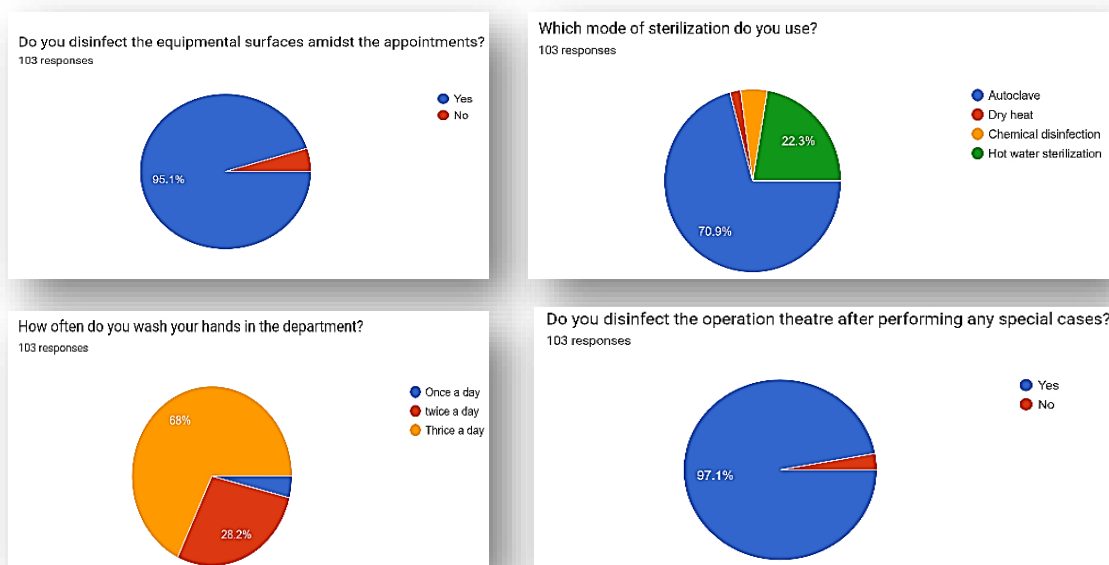
A survey questionnaire has been administered to each student included in the research. Researcher explained the advantages and disadvantages of the questionnaire and their interpretations to each participant. Participants have been instructed to submit survey questionnaire to researcher in person immediately upon completion. Altogether, 103 postgraduate and undergraduate students in the clinical departments received the questionnaire survey.

Data management and analysis

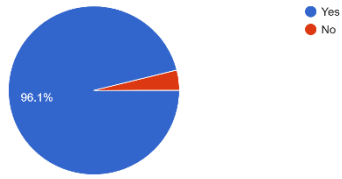
Data from the completed questionnaires has been recorded into a database (Excel spreadsheet) daily. Upon concluding the fieldwork, the data from the spreadsheets were imported into IBM SPSS Statistics 24 program. Imported datasets have been scrutinized for mistakes, anomalies, and rectified by consulting completed questionnaires.

A comprehensive study of the demographic data of survey participants and their responses concerning their understandings and perspectives was performed. The complex sample design was considered in the data analysis.

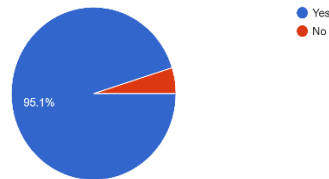
Results



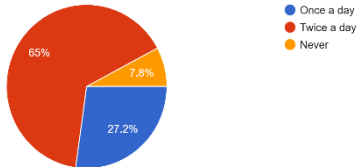
Do you know the concept of cross infection?
103 responses



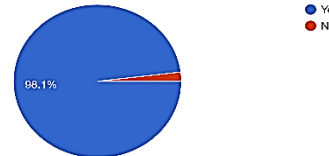
Do you use gloves for examination and receiving surgical equipment from department?
103 responses



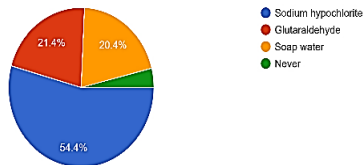
How often do you autoclave your instruments?
103 responses



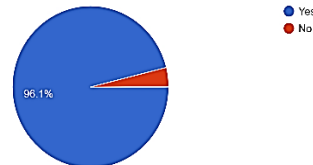
Are you aware of the infections caused by cross infection (Hepatitis and HIV, URTI)?
103 responses



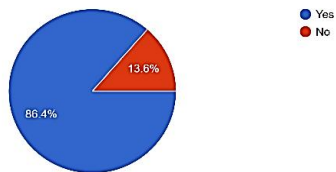
What types of products are typically used for disinfection?
103 responses



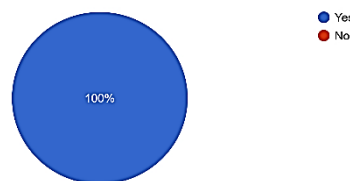
Do you follow universal precautions protocol (gloves, masks, protective eyewear, face shield)?
103 responses



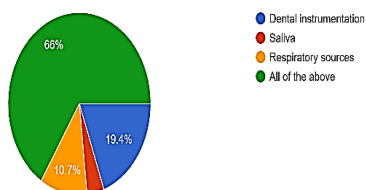
Can infectious diseases be transmitted without asepsis?
103 responses



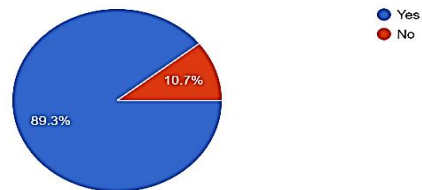
Do you remove accessories (watches, rings, bangles) before starting treatment?
103 responses



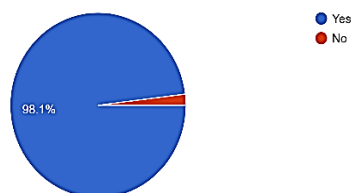
What are the potential sources of airborne contamination during dental treatment?
103 responses



Do you sterilize the items in between checking the op?
103 responses



Do you have the knowledge regarding the aerosol and splatter?
103 responses



Conclusion

This study reports that undergraduate and postgraduate students have good knowledge and awareness about sterilization or cross-infection control, and necessary preventive measures are implemented.

Supporting information

Questionnaire. Undergraduate or graduate students' knowledge and awareness of cross-infection control. A cross-sectional study.

Questionnaire.docx

https://docs.google.com/forms/d/e/1FAIpQLSdBYsHlterU_hC2lNhcA0Xzbh119wP0C3FQCbnbfOg3PIlaDg/viewform?usp=sharing&ouid=114254250187372146768

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