



ISSN: 0976-3376

Available Online at <http://www.journalajst.com>

ASIAN JOURNAL OF
SCIENCE AND TECHNOLOGY

Asian Journal of Science and Technology
Vol. 09, Issue, 06, pp.8327-8330, June, 2018

RESEARCH ARTICLE

KNOWLEDGE, ATTITUDE, PRACTICES REGARDING STERILIZATION AMONG HEALTH CARE STAFF IN A DENTAL COLLEGE, THODUPUZHA, KERALA

¹*Dr. Abdul Saheer, P., ²Dr. Mahesh, P.C., ²Dr. Cyriac Philip, ²Dr. Gayathri Sreedhar, ³Dr. Anjali, P.G., ⁴Dr Arsha Donly and ⁵Reem Nazrin

¹Department of Public Health Dentistry, Al Azhar Dental College, Thodupuzha, Kerala, India

² Department of Public Health Dentistry, Dayanda Sagar College of Dental Science, Bangalore, India

³ Department of Pedodontics, Amrita Institute of Dental Science, Kerala, India

⁴ Department of Oral Medicine and Radiology, Oxford Dental College, Bangalore, India

⁵Al Azhar Dental College, Thodupuzha, Kerala, India

ARTICLE INFO

Article History:

Received 11th March, 2018

Received in revised form

26th April, 2018

Accepted 09th May, 2018

Published online 30th June, 2018

Key words:

Dentistry,
Healthcare,
Sterilization.

ABSTRACT

Introduction: Prevention of infection and control is an important part of safe patient care. Health-care professionals are at an increased risk of cross infection and its transmission while treating the patients.

AIM: To assess the knowledge, attitude, practices regarding sterilization among health care staff in a dental college in Thodupuzha.

Materials and Methods: Cross sectional study was done among 40 nursing and paramedical staff of Al Azhar Dental College, Thodupuzha. The study was carried out with the help of the questionnaire consisting 15 questions. Descriptive statistics was used for analysis.

Results: Among the participants, majority of them reported changing lab coats if visibly contaminated and also of sterilizing instruments after each dental procedure and used protective barriers when assisting treatment procedure and only 55% of the participants admit to have had any basic training.

Conclusion: The present study concluded that the knowledge, attitude and practice of nursing staff was not sufficient.

Copyright © 2018, Abdul Saheer et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Sterilization is a process by which complete destruction or killing of all microorganisms including bacterial spores is achieved. Disinfection is thermal or chemical destruction of pathogenic and other types of microorganisms. It is less lethal than sterilization because it destroys most recognized pathogenic microorganisms but not necessarily all microbial forms (e.g., bacterial spores). Asepsis refers to prevention of contact with microorganisms (Damani, 2003). Prevention of infection and control is an important part of safe patient care. Concerns about the possible spread of bloodborne diseases, and the impact of emerging, highly contagious respiratory and other illnesses, require practitioners to establish, evaluate, continually update, and monitor their infection prevention, control strategies, and protocols (Sukhlecha, 2015). Health-care professionals are at an increased risk of cross infection and its transmission while treating the patients (Sukhlecha, 2015). Surgical procedures frequently cause bleeding and exposure to infected blood, saliva, and aerosol are a known means of infectious disease transmission. Surgeons have to work in a pathogen-rich, contaminated environment, often dealing with blood.

They are exposed to a variety of microorganisms present in blood and saliva, coupled with possible injury from the sharp instruments. While treating the patients, physicians become susceptible to various infectious diseases. Diseases such as hepatitis B and Acquired Immuno Deficiency Syndrome (AIDS) can spread through unsterile instruments (Sukhlecha, 2015). Prevention of infection and control is an important part of safe patient care. Concerns about the possible spread of blood-borne diseases, and the impact of emerging, highly contagious respiratory and other illnesses, require practitioners to establish, evaluate, continually update and monitor their infection prevention and control strategies and protocols. Therefore the present study was done to evaluate the knowledge, attitude and practice of nursing staff and paramedical staff regarding sterilization.

MATERIALS AND METHODS

The study was done including of nursing staff and paramedical staff of Al Azhar Dental College as these are the persons who most commonly carried out the sterilization of the instruments. The study was carried out with the help of the questionnaires which were validated by doing pilot study. There were total 15 questionnaires related to knowledge, attitude and practice of sterilization of the instruments. A convenient sample of 40 healthcare workers (nursing and paramedical staff) were

*Corresponding author: Dr. Abdul Saheer, P.,
Department of Public Health Dentistry, Al Azhar Dental College,
Thodupuzha, Kerala, India

included in the study (the available study population on the day (march 12/2018) of questionnaire distribution). The investigator explained the questions to the participants and the questionnaire were collected back on the same day itself. The questionnaire was translated to the local language (Malayalam) and validated. For analysis descriptive statistics was used.

RESULTS

The response rate of the study was 100%. Total 40 nursing staff had participated in the study. Each of the correct response was given as score 1 and incorrect as score 0. The study was carried out to assess the knowledge, attitude, practice regarding sterilization among the health care staff in a dental college. The nursing staff had varied knowledge about the sterilization methods and practices and not all had basic training regarding it. Among the participants, 38 were females while only 2 was male. The age samples include 18- 35 yrs of age and 36 and above age group, in which the former comprised of 16 of the participants and the latter comprised of 24.

Table 1. The percentage of participants in each age group

Characteristic	Number	Percentage
Age (Years)		
18-35	16	40
36 and Above	24	60

Table 2. The percentage of male and female participants

Characteristic	Number	Percentage
Gender		
Male	2	5
Female	38	95

Table 3. The knowledge, practice and attitude of infection control among the staff

Questions	Yes (%)	No (%)
Basic training	55	45
Awareness about contagious diseases	75	25
Awareness about precautions for Hep B patients	70	30
Awareness of methods of disposal of biomedical waste	80	20
Immunized against Hepatitis B in last 5yrs	90	10
Change of gloves between patients	85	15
Change lab coat if visibly contaminated	100	0
Dental clinics are more prone to infectious diseases than other medical fields	60	40
Instrument sterilization after each dental procedure	100	0
Removal of watches and jewellery during procedures	70	30
Willingness to treat patients with infectious disease	90	10
Awareness about the different sterilization methods	60	40
Use of protective barriers when assisting treatment procedure	95	5

Table 4. The percentage of injuries and infections cause due to used instruments

Questions	Yes (%)	No (%)
Percutaneous injury with a used instrument	25	75
History of being infected due to disregard of sterilization protocols	10	90

Among the participants, all the participants (100%) reported changing lab coats if visibly contaminated and also of sterilizing instruments after each dental procedure. But only 55% of the participants admit to have had any basic training on

sterilization and infection control methods. Most of the staff (90%) were immunized against hepatitis B infection but only 70% of them were aware of the precautions taken for hepatitis B patients. Majority of the staff (95%) reported that they used protective barriers when assisting treatment procedure. Only 60% of them knew that dental clinics were more prone to infectious diseases than other medical fields. Ninety percentage (90%) of the staff showed a positive attitude toward the treatment of patients with infectious diseases. A low percentage of staff (10%) reported that they had been infected due to disregard of sterilization protocols and only 25% of them had percutaneous injury due to a used instrument.

DISCUSSION

It is important for any hospital or dental clinic to set up its own measures to prevent the spread of infectious and transmissible diseases and it is also important that dental health care staff be aware of the risks and seriousness of infections. There are effective infection control procedures and universal precautions to prevent cross contamination, which should be practiced by doctors and health care staff including nurses and lab technicians of dental colleges. To minimize the risk of cross contamination in the hospitals, specific recommendations issued by professional health agencies like, routine use of barrier techniques (gloves, masks, spectacles), heat sterilization of instruments and the universal precautions have to be followed. The use of gloves, face mask, and spectacles has been reported to be important in preventing transmission. Increased awareness about risks of transmission of infection through blood and saliva has led to increased use of protective barrier techniques and prevention of communicable diseases. Factors associated with transmission of infection include presence of shedders of pathogens amongst the hospital personnel, use of inadequately sterilized equipment, contaminated environment and grossly contaminated surfaces. It should be emphasized that sterilization of instruments, sterile surgical protocol are all highly important and relevant factors, which directly affect the incidence of postoperative infections in any setting. Proper protocols need to be put in place for proper adoption of these simple procedures by all staff. When comparing studies, only 70% of the subjects were aware of the measures taken for hepatitis B patients compared to the 85% awareness in a previous study. The findings of the present study indicated that 90% of the subjects had been immunized against hepatitis B which is much better than reports of similar study conducted in Yemen, which showed only 70.7%, but is almost similar proportion was reported in another study conducted in north India³ i.e. 95%. When comparing knowledge of disposal of biomedical waste, it is much better i.e. 80% when compared to the north india which is only 18.8%³. Despite the fact that there is evidence of improvement in compliance with barrier use in many countries, dentists' adherence to all infection control guidelines and standard precautions still needs further improvement. In the present study, use of barrier techniques was reported to be high, almost 95%, but only 85% of them change gloves between patients which was very unsatisfactory compared to the 96.6% use reported in a study conducted in Yemen, Studies have shown that aerosol and splatter containing pathogens can contaminate clinical wear, targeting the chest and forearms, and remain alive for several days. All of our staff according to our study reported changing of lab coats when visibly contaminated. This is much better than

those reported in yemen which was only 90%. It has been recommended that dental uniforms be worn only in dental clinics, and changed daily and immediately after a blood splatter to prevent cross-contamination. Many dental instruments are categorized as critical devices and as such devices should be sterilized at the point of use. In our study all the staff reported that they sterilized the instrument after each procedure. When asked about their willingness to treat patients with infectious diseases, majority of them i.e. 90% were likely to exhibit it which was favourably higher than other parts of the world like yemen which was reported only to be less than 60%. The awareness of all sterilization methods is essential for a health care staff in dental college, which was only 60% in our study and therefore needs improvement. This survey reports that 25% of the staffs had non-sterile occupational injuries. This finding is lower than that uncovered in a similar study conducted in yemen i.e. 62% reported occupational exposures. Sharp injuries are more likely to occur in the dental environment than in other health care settings, usually due to the small operating field, frequent patient movements, and the variety of sharp dental instruments. Such injuries may pose the risk of transmission of blood-borne pathogens, especially hepatitis B, C, or HIV.

Limitations and recommendations

The present study had some limitations. The results of the present study may not be generalizable to nursing staff present in other hospitals in other parts of the country although the study was conducted in an accredited teaching institution in south India. As the study relied upon self-reported data, some subjects could have given socially acceptable responses. Therefore, the responses might not have accurately reflected the true levels of knowledge, attitude, and behavior, and thus, the reported level of practice might be lower than the real level. Moreover, this number of questions cannot show the real knowledge and practice of the respondents. Nonetheless, the number of questions was kept to a minimum to improve the response rate and this approach appeared to work well. Continuous educational programs, as well as training workshops on infection control isolation precaution for dental health care staff, and the required facilities to allow compliance with infection control policies are urgently needed. Moreover, all the vaccinations, especially Hepatitis B vaccination, should be set as mandatory. Thus the present study had highlighted the current knowledge, attitude and practice of the nursing and other paramedical staff about the sterilization protocols. It should be emphasized that all the healthcare workers should have basic knowledge of the sterilization as it is important for the patient as well as health care workers point of view.

Conclusion

The present study concluded that the knowledge, attitude and practice of nursing staff was not sufficient. Regular seminars, symposiums or meetings should be taken to improve the situation.

REFERENCES

Damani NN. 2003. Disinfection and sterilizations. In: Manual of Infection Control Procedure, 2nd edn. London: Cambridge University Press.

Sukhlecha AG, Vaya S, Parmar GG, Chavda KD. 2015. Knowledge, attitude, and practice regarding sterilization among health-care staff in a tertiary hospital of western India. *Int J Med Sci Public Health*, 4:1377-1382.

Kaur A, Gambhir RS; Awareness, attitude and vaccination status regarding hepatitis B among staff nurses of a teaching hospital in north India; OHDM - Vol. 15 - No.4 - August, 2016

Halboub ES, Al-Maweri S, -Soneidar. Knowledge, attitudes and practice of infection control among dental students at Sana'a university, Yemen; *J Int Oral Health*. 2015 May; 7(5):15-9

1. Have you ever had a basic training about sterilization and infection control practices?

(1) (2)

2. Are you aware about the various contagious diseases that dental surgeons and nurses are prone to?

(1) (2)

3. Are you aware of the precautions taken while dealing with Hepatitis B patients?

(1) (2)

4. Are you aware about the various methods of disposal of biomedical waste?

(1) (2)

5. Have you been immunized against Hepatitis B in the last 5 years?

(1) (2)

6. Do you change gloves between patients?

(1) (2)

7. Do you change gowns/lab coats if visibly contaminated?

(1) (2)

8. Do you agree with the statement 'dental clinics are more prone to infectious diseases than other medical fields'?

(1) (2)

9. Do you sterilize instruments after each dental procedure?

(1) (2)

10. Do you remove watches and jewellery during procedures?

(1) (2)

11. Have you ever had any percutaneous injury with a used instrument?

(1) (2)

12. Are you willing to assist in treating patients with infectious diseases?

(1) (2)

13. Are you aware of the different sterilization methods?

(1) (2)

14. Do you use protective barriers such as gloves, masks, eyewear when assisting a treatment procedure?

(1) (2)

15. Do you have a history of being infected due to disregard of sterilization protocols?

(1) (2)
