ISSN: 2581-5989
PubMed - National Library of Medicine - ID: 101738774

International Journal of Dental Science and Innovative Research (IJDSIR)

IJDSIR : Dental Publication Service

Available Online at: www.ijdsir.com

Volume – 5, Issue – 6, November - 2022, Page No. : 163 - 169

Attitude, knowledge and perception of cross infection control among dentists

[1]Dr. Nirmal Nayak, Tutor, Department of Public Health Dentistry, Karnavati School of Dentistry, Gandhinagar, Gujarat.

[2]Dr. Kalagi Panchal, Intern, Government Dental College and Hospital, Ahmedabad, Gujarat.

[3]Dr. Aashvi Agarwal, Private Practitioner

[4]Dr. Kavisha Shah, Intern, AMC Dental College and Hospital, Ahmedabad, Gujarat.

[5]Dr. Barish Thakkar, Private Practitioner

[6]Dr. Freya Gandhi, Intern, Karnavati School of Dentistry, Gandhinagar, Gujarat.

[7]Dr. Stuti Bajaj, Senior lecturer, Dept of oral and maxillofacial Pathology, Karnavati School of Dentistry, Karnavati University, Gandhinagar, Gujarat.

Corresponding Author: Dr. Nirmal Nayak, Tutor, Department of Public Health Dentistry, Karnavati School of Dentistry, Gandhinagar, Gujarat.

Citation of this Article: Dr. Nirmal Nayak, Dr. Kalagi Panchal, Dr. Aashvi Agarwal, Dr. Kavisha Shah, Dr. Barish Thakkar, Dr. Freya Gandhi, Dr. Stuti Bajaj, “Attitude, knowledge and perception of cross infection control among dentists”, IJDSIR- November - 2022, Vol. – 5, Issue - 6, P. No. 163– 169.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Objectives: A potential risk factor in hospitals or private clinics is the spread of microorganisms from known and unknown sources. This can happen between patients, between patients and medical professionals, among staff members, and between patients. The existing study aims to determine the attitude, knowledge and perception of cross infection control among dentists.

Materials and methods: Dentists were given a pre-validated Proforma to fill out in order to record their responses, which were then analysed.

Results: Among individuals who responded to the study, there was a lack of understanding of personal protective equipment and the risk of infection. Responders recognised the importance of it and understood the rationale behind each procedure. Adherence to the infection control protocol is very important. Most practitioners practised what they preached.

Conclusion: The understanding of disease transmission in the clinical setting, particularly in dentistry clinics, needs to be stressed more. The local database of knowledge on Cross Infection Control will now include the study's findings for future reference.

Keywords: Hepatitis, Cross Infection Control, Dentist, Hospital

Introduction

Infection is defined as the entry and development or multiplication of a disease producing agent in an individual. "A condition brought on by the proliferation or multiplication of microorganisms that have infected a susceptible person's body." [1]

Infection control is fundamentally concerned with the prevention of nosocomial/ health care - associated infections between patients, between patients and medical professionals, among employee members, and between patients. The pathways are blood, saliva, other body secretions, contaminated instruments, and tissue debris. Infection control should be a key priority in all hospitals and dental offices. Hand washing before and after patient contact and personal protective equipment should be used in routine practice. Isolation in dentistry is now mandatory to reduce blood and saliva in the surgical area using high pressure suction and rubber dams. Waste such as amalgam fragments should be disposed of carefully to avoid toxicity to both individuals and the environment. Dispose of sharps waste in closed containers for avoiding reuse and to avoid needle stick injuries should be done.

Pathogens such as bacteria and viruses are the causative agents of many infectious diseases. Patients with human immunodeficiency virus (HIV) and hepatitis are considered high-risk patients, and protocols to prevent cross-infection should be followed when treating such patients. Both doctors and support staff should be vaccinated, especially to avoid hepatitis transmission. This study was conducted with the aim of determining perceptions, attitudes, and knowledge of cross-infection control among clinicians.

Aims and objectives

To determine the attitude, knowledge and perception of cross infection control among dentists.

Objectives

1. To determine the level of knowledge of dentists in cross infection control in dentistry.
2. To determine the perception of dentists toward cross infection control in dentistry.
3. To determine the attitude of cross infection control in dentistry

Review of literature

With the emergence of Human Immunodeficiency Virus (HIV) and acquired immunodeficiency syndrome (AIDS) in the eighties, the Centre of Disease Control (CDC) created guidelines on HIV prevention as well as universal precaution guidelines. In 1996, the CDC formed the standard precautions; which was an extension of the universal precautions to the health care personnel and their patients. (2) These infections are a major public health concern and a threat to patient safety, contributing to increased morbidity, mortality, and cost. (7)

A study conducted in the 1970s found that dentists had an increased risk of hepatitis B compared with the general population. Injured people had an increased risk of developing clinical hepatitis. However, due to adherence to universal precautions and increased use of vaccines, occupational infections are declining. (8)

A Canadian survey in 1991 on 'HIV and infection control in 1990s' indicated 80% of the dentists were prepared to treat AIDS patients, compared to a lower 60%, reported for US dentists in 1991. Klein et al reported that dental professionals have a low occupational risk for HIV infection. Because most injuries in dentistry are caused by small-gauge needles and/or compact instruments, dental professionals are exposed to smaller amounts of blood and therefore, are at a lower risk (8)

Another survey found that an increasing number of dentists are using autoclaves for sterilization. In 1988 he had more than in 1986 (80% vs. 67%). Still, his third of general dentists did not monitor the sterilization process.

Of the 67% who did, only 21% used biological monitors in 1986. (6)

Methodology

A randomized, observational, cross-sectional study was conducted with 40 dentists who wished to participate in this study. A pre-validated form was created and distributed to subjects to record their responses. Clinicians and students were included in the study and responses noted were statistically analysed.

Results

A) Attitude

ATTITUDE on transmissible diseases

Responses to the transmission route of hepatitis B:

Most dentists believe that the transmission route of hepatitis B is blood (94.60%), 80% of respondents said the second highest transmission route is body fluids, 65.1% saliva reported. Droplet, aerosol, and skin/exudate rates were the lowest at 28%.

Responses to HIV transmission route

Blood as the transmission route for HIV was cited as the first choice by 94.85% of respondents, followed by body fluids by 72.86% and saliva by 48.23% as the third most common choice was mentioned. The skin/exudate was fourth with 14.07% and the droplet/aerosol route had the lowest percentage with 08.44%.

1) Responding to the link between non-compliance with hand hygiene in form of gloves and infection. Seventy two percent of the participants agreed with the link between non-compliance with hand hygiene protocols and infection outbreaks. 28% were not in accordance with the statement.

Method of sterilization

All practitioners and students agreed and were convinced that autoclaving is the method of sterilization. 75% said liquid agents are also used as a sterilization method. 20% opted boiling as a sterilization method. 35.6% indicated using washing as a sterilization method. 11%. 26.2% and 4% said they did not use cleaning agents, boiling method, or liquid sanitizers as a disinfection method.

2) Hand washing protocol

All dentists (students and professionals) agreed that hands should be washed before visiting a patient and after investigating a patient.

B) Knowledge

1) Response to significance of various techniques in Cross Infection Control.

	Very Important	Important	Not Important
Having Knowledge of transmissible infections		√	
Hand washing & Hygiene	√		
Usage of gloves		√	
Usage of Masks		√	
Protective eyewear			√
Protective clothing (Lab-coats, Surgical gown etc.)			√
Isolation methods	√		
Disposal of sharps in puncture proof containers		√	
Cleaning and decontamination of Instruments		√	
Sterilization	√		
Disinfection of clinical contact surfaces			√

2) Reaction to importance of various methods in Cross Infection Control

Majority of the participants indicated that the use of isolation methods in clinics was very important and few said that they were not important. All the dentists (100%) indicated that it is very important to dispose of sharps in puncture-resistant containers along with maintenance of isolation. The numbers for instrument cleaning, decontamination, and sterilization were high. 95% of professionals indicated that the disinfection of clinical surfaces was not important.

C) Perception

1) Stated practices for Hand washing

Eighty five percent (85%) of the practitioners washed their hands before seeing patients while 15% washed their hands occasionally.

Fifty percent (50%) of practitioners disinfected the dental chair before seeing a patient. Thirty-eight (38%) disinfected it occasionally before seeing a patient and 12% never disinfected the chair before seeing patients.

Eighty one percent (81%) of practitioners wore one mask throughout the clinical session, few of the practitioners never wore one mask throughout one clinical session or occasionally wore the mask. Almost twenty two percent (22%) of practitioners changed masks during a single clinical session, while 55% of practitioners changed masks occasionally in a clinical session. Twenty three percent (23%) never changed masks during a single session and used only a single mask for all patients.

2) Noted Practices (Glove usage, protective eyewear and isolation methods)

Ninety five percent (95%) of practitioners reported to wear gloves prior to examining a patient, 3% only wore gloves occasionally prior to examining a patient. 2% never wore gloves prior to examining a patient. 80 % of practitioners removed their gloves before leaving the chair side, while 12% removed their gloves occasionally when leaving the chair side. 8% never removed their gloves before leaving the chair side. 98% replaced gloves after treatment whereas 2% only replaced gloves occasionally.

Thirty four percent (34%) wore protective eyewear, major number of the dnetists wore protective eyewear occasionally and few never wore protective eyewear in their clinical sessions.

Thirty five percent (45%) of practitioners reported to use isolation methods, while 55% of practitioners use them only occasionally.

3) Described Practices (Sharp disposal, disinfection of lab work)

All the practitioners (students and private dentists) reported to carry out sharp disposal.

Eighty five percent (85%) of practitioners cleaned and disinfected their laboratory work before handing it over to the dental prosthesis laboratory, some did it occasionally while other practitioners never disinfected their laboratory work. 52% of practitioners cleaned and disinfected their prosthetic laboratory work prior to placing it into the patients mouth, 30% did it occasionally and 18% never cleaned their prosthetic laboratory work prior to placing it into the patients mouth.

Conclusion

1) Attitude was good about various routes of transmission for most of the infectious diseases, transmission of H.I.V. through saliva. The fact that most of the practitioners considered general work clothes to be part of Personal Protective Equipment (PPE) demonstrated poor knowledge on PPE's. Knowledge of dental materials affecting gloves, and sterilization was way better.

2) Knowledge of clinical dentists (private practitioners) were positive and considered various aspects of cross-

infection control to be important or very important. The rationale behind each procedure was understood.

3) Practitioners followed their perception to infection control practice protocols as most procedures were performed primarily for clinical sessions and almost all extended an affirmative attitude to cross-infection control into practice.

Recommendations

Knowledge about disease transmission should be more foregrounded in dental clinics and hospitals or institutions. Isolation methods and misunderstood reasons for goggles in cross-infection control should be explained to the working dentists. A limitation of this study was that it provided only reported infection control practices. Practitioners or students may be reporting what is asked rather than actual practices. Comparison with reports on actual practice of infection control is recommended.

References

1. Verrusio, Neidle EA, Nash KD et a1. The dentist and infectious diseases: a national survey of attitudes and behaviour. The journal of American Dental Association 1989; 118: 553-562.

2. Centres for Disease Control. Guidelines for infection control in dental healthcare settings, 2003: Recommendations and Reports. Dee 192003; 52 :(1-61)

3. Mosley J W, Edwards VM, Casey G et a1. Hepatitis B infection in Dentists. New England Journal of Medicine, 1975; 293: 729-734.

4. Crawford TJ. State of art practical infection control in dentistry. Journal of American Dental Association 1985; 110: 629-633

5. Gershon RR, Karkashian CD, Grosch JW, et al, Hospital safety climate and its relationship with safe work practices and workplace exposure incidents. American Journal Infect Control 2000; 28:211—21

6. Nkhensani C. Math bathe. Oral Health Practitioners and HIV/AIDS: Knowledge, Attitudes and Practices. A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannes burg.

7. Bini yam Sahiledengle Geber Mariyam et al Assessment of knowledge and practices of healthcare workers towards infection prevention and associated factors in healthcare facilities of West Arsi District, Southeast Ethiopia: a facility-based cross-sectional study, Arch Public Health. 2018; 76: 69.

8. S. Bajaj et al Acquaintance, perspective and application of cross infection control among clinical practitioners 2020; vol 9, issue 4

Questionnaire

All data given in this study will be treated with confidentiality and only used for the scope of research. Fill in the details, and/or tick the appropriate answers. There may be more than one correct answer. Answer all parts of the questions. [8]

Questions

1. Write the number corresponding to route/routes of transmission for the following diseases in the dental practice:

Blood = 1 Saliva = 2 Bodily fluids = 3 Droplet/aerosol = 4 Skin/exudates = 5

Hepatitis B virus ___ ___ ___ ___ ___

H.I.V ___ ___ ___ ___ ___

2. Are gloves being used before touching non-intact skin and mucous membranes?

Yes ___ No ____ Not sure______

3. Are general work clothes considered to be part of the Personal Protective Equipment?

Yes ___ No ___ Not sure ___

4. What methods of sterilization are used at Dental Clinics?

	Yes	No
1. Washing	___	___
2. Boiling	___	___
3. Liquid chemical sterilizing agent	___	___
4. Autoclave	___	___

5. Please fill the following table. Tick the most appropriate.

	Very Important	Important	Not Important
l. Having Knowledge of transmissible infections			
2.Hand washing & Hygiene			
3. Usage of gloves			
4. Masks			
5. Protective eyewear			
6. Protective clothing (Lab-coats, Surgical gowns etc)			
7. Isolation methods			
8. Disposal of sharps in puncture proof containers			
9. Cleaning and decontamination of Instruments			
10. Sterilization			
11. Disinfection of clinical contact surfaces			

6. For the procedures listed above, do you understand the rationale behind the practices of each?

	Yes	No	Not clear
l. Having Knowledge of transmissible infections			
2.Hand washing & Hygiene			
3. Usage of gloves			
4. Masks			
5. Protective eyewear			
6. Protective clothing (Lab-coats, Surgical gowns etc.)			
7. Isolation methods (suction device, rubber dam, etc.)			
8. Disposal of sharps in puncture proof containers			
9. Cleaning and decontamination of Instruments			
10. Sterilization			
11. Disinfection of clinical contact surfaces			

7. For the following questions regarding your practice of cross infection control, please indicate with either:

(1) All the time (2) Occasionally or (3) Never

1. Hand washing: Before seeing the patient ___

After seeing the patient ___

After finishing treatment ___

2. Disinfection (Swabbing):

The Dental chair: Before seeing a patient ___

After seeing a patient ___

At the end of the session ___

3. Masks:

Wear one mask throughout the clinical session ___

Change masks in between patients ___

4. Gloves usage:

Wear gloves before examining or treating a patient ___

Remove gloves before leaving the chairside ___

Replace torn gloves ___

5. Do you use protective eye wear ___?

6. Use isolation methods (rubber dam) ___

7. Dispose sharps in puncture proof containers ___

8. Clean and disinfect impressions and lab work:

Before taking it to the lab ___

Before placing it into the patients’ mouth ___