



# STERILIZATION & CROSS INFECTION IN DENTISTRY; PATIENTS PERCEPTION

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**ABSTRACT... Objectives:** This study aims to assess the knowledge, perception and attitude of patients towards sterilization and cross infection and to assess the effects of education on perception and behavior towards sterilization and cross infection. Cross infection control is most important in dentistry as it is considered one of the main reasons of rapid spread of infectious diseases now a days. **Setting:** Major public sector hospital of Punjab Pakistan, Punjab Dental Hospital Lahore. **Material & Method:** We surveyed patients in OPDs of Punjab Dental Hospital Lahore. Survey questions covered demographics as well as 15 questions related to sterilization and cross infection in dentistry. Questionnaires were given to educated people and interviews were taken from uneducated or less educated people. Data was collected and analyzed. **Results:** patients have some knowledge about sterilization and cross infection but their concepts need a lot of improvement. Patients know that microbial contamination occurs but they are unaware of the diseases that are transmitted. Similarly on other perspective there is discrepancy in knowledge and practice, as they do not take it seriously or they are unaware of the consequences of cross infection or long term effects of HIV, Hepatitis B & C. Disposable instruments are very important for controlling cross infection. Only 60% people said they would prefer disposable instruments over reusable instruments when option is given to them. Most people are reluctant to be treated with disposable instruments due to extra cost on treatment. 92% were well aware of significance of hand washing of dentist before and after dental checkup, but when they go through dental examination they are either careless or hesitant to ask dentist to wash hands. **Conclusion:** Besides the knowledge there are other factors like patients attitude and concerns also play vital role in preventing infection transmission in them. We have to educate them about infectious diseases and their root of transmission and their long term effects on health.

**Key words:** Sterilization, Cross Infection.

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## INTRODUCTION

“Sterilization is the process by which all forms of microbial life from surface, medium and instruments are destroyed by various physical and chemical methods.”<sup>1</sup> cross infection is “The transfer of infectious agent from one individual to another in a clinical environment is known as cross infection.”<sup>2</sup>

Sterilization and cross infection are closely linked together.

Sterilization is obtained from different techniques i.e. heat, chemical, radiation, sterile filtration.<sup>3</sup>

Dental instruments sterility is maintained by

containment in sealed packaging until use. Aseptic technique is the act of maintaining sterility during procedures. Patients, dentists and auxiliaries of all groups run risk of cross infection every time they enter the dental clinic.<sup>4</sup> Unless precautions are taken, there is an even likelihood that patients and dental professionals will be exposed to blood borne and other potentially pathogenic infectious agents.<sup>5</sup> By understanding principles of disease transmission and using infection control practices, dental personals can prevent cross infection.<sup>6,7</sup> Every patient should be considered potentially infectious, as every patient carries the risk of having infectious disease undiagnosed.<sup>8</sup> So the principles of infection control should be observed according to the

Centre for Disease Control guidelines.<sup>9</sup> Nature of most dental procedures, instrumentation, and patient-care settings demand specific strategies directed at prevention of transmitting pathogens among dental personnel and their patients in the form of “standard precautions” i.e. sterilization, disinfection and barrier protection.<sup>10</sup> Dental Practices in Pakistan have been identified as potential risk factors in transmission of infectious diseases especially Hepatitis B & C.<sup>11,12</sup> Patients, dentists and other dental staff is at great risk of infectious diseases like AIDS, hepatitis, herpes simplex and cytomegalovirus (CMV).<sup>13</sup>

**Materials & Methodology**

This study was conducted at the only major public sector hospital of Punjab Pakistan, Punjab Dental Hospital Lahore.

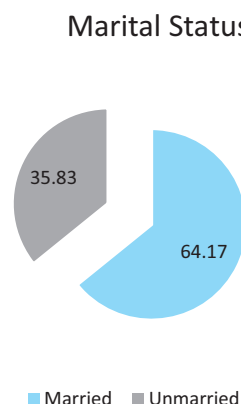
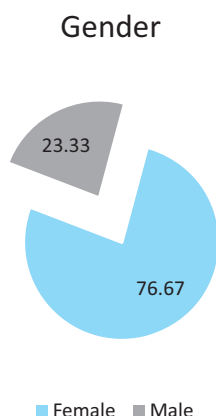
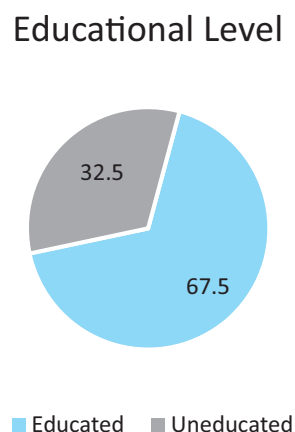
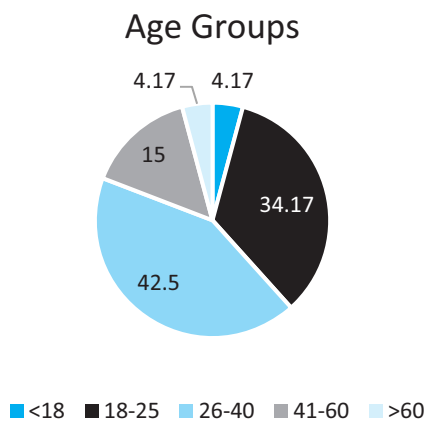
Total 120 questionnaires were filled. Some of them were filled by taking interviews while others

by patients themselves. The questionnaires were designed to evaluate the patients’ perception of Sterilization and Cross Infection in dentistry. The questionnaires involved 15 questions assessing knowledge, perception and attitude of patients towards sterilization and cross infection. Our study group included patients of all age groups, educated, uneducated, married, unmarried, males and females. The study protocol and the use of data for research was explained to the patients to get fully informed and understood consent. Results obtained from different respondents were tabulated and statistically analyzed.

**RESULTS**

Response rate was 100%. According to the present study we noticed educated people and some uneducated people were aware of sterilization and cross infection.

**Demographics**



Questions	Yes	No
Diseases can be spread by used instruments?	91.67%	8.33%
Hand washing is necessary before and after checking every patient?	91.67%	8.33%
Do you think washing of instruments by tap water washes away all germs?	29.17%	70.83%
Do you think putting instruments on same napkin for all patients or not using a napkin at all is safe?	29.17%	70.83%
Getting any type of medical or dental treatment by a person on footpath or on a bicycle is safe?	8.33%	91.67%
Diseases can be spread by touch?	68.33%	31.67%
Diseases can be spread by contact with saliva?	94.17%	5.83%
Diseases can be spread by contact with blood?	94.17%	5.83%
Wearing of gloves is necessary for doing any type of dental treatment?	94.17%	5.83%
Sterilized instruments that have been kept in open place for long time are still free of germs?	30%	70%
Instrument dropped accidentally during treatment can be used without sterilizing again?	27.5%	72.5%
Do you prefer disposable instruments on reusable & sterilize able instruments?	61.67%	38.33%
Using the same disposable instruments in subsequent visits without sterilizing bothers you/can cause infection?	65.83%	34.17%
Do you think touching cloths, light, materials, bottles or medicaments with gloved hands can transfer germs in patients?	51.67%	48.33%
Is rinsing instruments with Spirit or Dettol sufficient to make instruments germs free?	74.17%	25.83%

## DISCUSSION

The data showed that patients, in general, have some knowledge about sterilization and cross infection and they are concerned about it, especially the educated people. Majority knows used instruments can cause disease transmission from one patient to another and hand washing and wearing of gloves is necessary. But mostly people were unaware of methods of sterilization like enough percentage of people think tap water is enough for sterilization that shows lack of knowledge about sterilization. 74% said spirit or dettol is enough to obtain proper sterilization that shows misconception about sterilization. Many people think once instruments are sterilized they remain sterilized even when they are dropped mistakenly or are placed on unclean tray or napkin. Majority of patients know infection can be spread by saliva and blood. We noticed people were unaware about disposable instruments and their importance. We also noticed some uneducated people also have enough knowledge of sterilization and cross infection. Mostly people both educated and uneducated believe that disinfection is sterilization. Almost everyone said we should not go to quacks for treatment but poor people said, when we do not have expenses to afford good dentist or not having a dentist in nearby area then going to a quack is also

right, that shows they are unaware of long term consequences of Hepatitis B & C and HIV. We noticed that class of people and area from where they belong greatly affects their perspective. Accurate or inaccurate, their knowledge still needs a lot of improvement and that is only possible with more and more awareness on this specific topic among the masses.

Dental health education programs should include this topic and dental health educators and workers should play a key role in educating people at the gross level, from schools to hospitals to media to every possible platform available. Accurate knowledge of which infection can possibly spread and how it can spread should be given to the masses. As researches have shown, dentistry is playing a major role in spread of hepatitis B, C and HIV infection not only from patient to patient but from patient to dentist and dentist to patient as well.<sup>11</sup> With main reasons are being the lack of awareness in patients and lack of practice of proper sterilization and cross infection control guidelines by dentists.<sup>12</sup> Other reasons for not practicing universal precautions are cost, deficient resources and burden of patients.

By educating people we can expect that they can keep close eye on dentist whether he is following

the guidelines properly or not. The dentist needs to acknowledge that it is the right of every patient that he should be informed about all the preventive measures taken by him before starting any dental procedure. This will not only help in overcoming patient's concerns about cross infection but will also help in spreading awareness as well.

Patients should be told that it is their obligation to give correct history to the dentist and not to hide any disease out of the fear of being stigmatized, such as Hep B, C and HIV, as this will help in improving the cross infection control measures. Screening of hepatitis B, C and HIV should be free of cost so that everyone can go through. Screening of patients should also be made compulsory before any dental procedure and a dentist should also go through screening at least once a year. Dentist should assume every patient as infectious before, during and after treating every patient.<sup>8</sup>

Sterilization is the duty of dentist. The reason to know patient's perspective was that, so they can ensure their own treatment sterile by keeping an eye on sterilization and forcing dentist to maintain sterile environment to prevent cross infection.

Cross infection can only be controlled with the joint efforts of patients and dentists, with the dentists strictly following the cross infection control guidelines and patients ensuring that they do so and cooperate completely with the dentist.<sup>9</sup>

## CONCLUSION

People have knowledge of sterilization and cross infection, but their knowledge needs much improvement.

Awareness determines the perspective rather than only education level, and the practices of people are not in accordance to their perspectives due to high cost, lack of time and lack of facilities.

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*It is fatal to enter any war without  
the will to win it.*

– Douglas MacArthur –

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#### AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Sadaf Zahid	Conception, design and final drafting of manuscript.	
2	Anam Rafiq	Article writing, research designing and interpretation of data.	
3	Saman Zahra	Conception, Data collection and literature review.	
4	Dr. Muhammad Ilyas	Provided substantial help, guideline and final approval in cvarious aspects	