ORIGINAL ARTICLE

KNOWLEDGE AND PRACTICE OF STERILIZATION AMONG DIFFERENT HEALTH CARE WORKERS

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ABSTRACT

Objective of the study was to assess the level of knowledge and awareness among different levels of healthcare workers about sterilization. A questionnaire was designed to obtain information about knowledge of sterilization among dental house officers, dental auxilliaries and other non teaching staff of different dental colleges of Karachi. The sample size of the study was 500. The questionnaires were filled in by dentists and dental auxiliaries. The was spread over 6 months. The questionnaire contained questions about socio-demographic data and knowledge about sterilization, wearing of gloves, masks, and sterilization protocol. Data were analyzed by SPSS statistical software. There were 12 questions in each questionnaire. The study group consisted of 182 (36.4%) male and 318 (63.6%) female. The majority of respondents included house officers, teaching and non teaching staff of different medical / dental colleges of Karachi. Most of the dentists wore gloves while treating patients, 484 (98.6%) of respondents said that they always changed their gloves after each patient where as 11(2.2%) said they did sometimes.

The results of this study showed that the level of knowledge of the dentists on sterilization was adequate.

Key Words: *Sterilization, disinfection, dentists, cross-infection.*

INTRODUCTION

Oral and dental diseases have become a major public health concern in both developed and developing countries. Sterilization is a process by which, complete destruction or killing of all microorganisms, including bacterial spores is achieved.[1] 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.[2] Dental care professionals are at an increased risk of cross infection as well as its transmission while treating the patients.[5-7] Dental procedures frequently cause bleeding and exposure to infected blood, saliva and aerosol are a known means of infectious disease transmission. The use of gloves, face mask and spectacles has been reported to be important in preventing the three routes of transmission (dentist to patient, patient to dentist, patient to patient) in a dental clinic.[4] Dental surgeons have to work in a pathogen–rich, often blood, and contaminated environment. 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, doctors themselves become susceptible to different infectious diseases. There are effective infection control procedures and universal precautions for dental clinics and dental operatories to prevent cross contamination, which should be practiced by dentists, dental technicians, dental chair-side assistants, and dental lab technicians.[3] To minimize the risk of cross infection in the dental clinic, specific recommendations have been issued by professional health agencies. These recommendations include routine use of barrier techniques (gloves, masks), heat sterilization

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of dental instruments and the universal precautions.[8] Dentist's compliance with these recommendations and infection control programs have been recently studied in different parts of the world.[9-12] These studies indicate that there are gaps in some dentist's knowledge regarding modes of transmission of infectious diseases so the objective of this study was to increase the awareness and importance of sterilization in reducing the communicable diseases among dental faculty and to identify the areas where improvements can be made in dental OPD.

METHODOLOGY

A total of 6 dental teaching hospitals and some private dental clinics were randomly selected in Karachi, Pakistan. A total of 500 respondents took part in the survey including the dental house surgeons, post graduate trainee of the respective colleges or had graduated from some other dental teaching institutes, non-teaching and teaching faculty members, dental lab technicians and students from the third and final year BDS. Participation of the respondents was voluntary. The study was conducted from 1st April 2012 to 30th September 2012.

A self administered, close ended questionnaire was given to the voluntary respondents and the information about their knowledge, practices and attitude was evaluated. Questionnaire elicited information on demography and perception on the use of gloves, facemasks, goggles, disinfectants in the regular dental practice, methods of sterilization and knowledge about the waste management. The data analysis was done with the SPSS version 17.0 by analyzing the frequencies and percentages of the collected data.

TABLE 1: GENDER DISTRIBUTION

Gender	Number	Percentage
Male	182	36.4
Female	318	63.6
Total	500	100

TABLE: 2 QUESTIONNAIRE

Gender	Yes	No
Do you prefer disinfection over sterilization?	89.4	10.2
Do you know about an organization which provides adequate information for sterilization?	47.8	52.2
Do you have idea about waste management?	70.6	29.0
Do you have Knowledge about barrier technique?	64.4	35.4
Do you follow sterilization protocol?	96.0	4.0

TABLE 3: PROTECTIVE ATTIRE USAGE

Protective tools	Number	Percentage
Eye wear	6	1.2
Face mask	18	3.6
Gloves	81	16.2
Head cap	2	0.4
All of them	393	78.6

RESULTS

Details about results are given in Table 1-3.

DISCUSSION

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. In this study, 97.4% believed that sterilization is a very important part of the daily routine. The most common method of sterilization reported by the respondents was autoclaving (93.2%) which is higher than in previous studies (Sofola and Savage 84.1%, Sote 92% and Omolara 79.2%).[12-15] In this study dry heat method was used by 3.8% and boiling method by 1.8% compared to 43.7% and 31.9% respectively by the study of CC Azodo et al.[24] According to Omolara et al[15] 1.2% of the respondents were unaware of the proper sterilization techniques. The use of disinfectants was 89.4% in this study, compared to 10.2% who did not use any kind of disinfectants. Another observation was the frequency of washing hands. The 41.2% washed their hands once only while 42.6% of the respondents washed their hands twice. 14.8% washed their hand more than 4 times and 1.4% did not feel the need of washing their hands. Kearns et al,[25] in a study of 194 patients attending an orthodontic clinic in Ireland found that 97% of patients considered that orthodontists should routinely wear gloves, whereas in this study, 78.6% respondents wore gloves. A total of 86.5% of patients thought that the orthodontist should change gloves between patients. In this study 96.8% of the respondents changed their gloves after examining a patient which was higher. While handling instruments, 83% always prefered to use gloves during instrument handling, followed by 15.2% who used the gloves sometimes and 6% did not use gloves. The use of proper protective devices plays major part in preventing oneself from getting contaminated during a dental procedure. In present study 1.2% thought that eye wear should be used in dental practice as blood or foreign particles can get into eyes accidently. The proportion of dentists using eye wear in this study was lower than that reported in previous studies Nigeria, 11.6%[15], 58%[17], 58%[18], 74% - 94%[19,20,21],

50.84%.[22] 3.6% believe in wearing only face mask during practice. Porter et al.[23] thought that head cap helps to cover and protect their hairs from getting dirty or falling into patients mouth accidently. 78.6% of the respondents used all of these protective devices and did not perform any kind of dental procedure if any of the attire was missing. Very few of the respondents had a poor knowledge about the proper sterilization. When asked about an organization about waste management 52.2% were unaware of such organization or institute. 56.2% the staff were vaccinated. This study concluded that knowledge of sterilization among different levels of dental professionals was adequate.

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