

Knowledge of Infection Control among Female Dental Assistants in Riyadh City, Saudi Arabia

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Abstract

Infection prevention must be a top concern in all dental settings, regardless of the level of care offered, and all settings must be set up to follow standard precautions and other infection prevention guidelines. This study's objective was to evaluate dental assistants' knowledge with infection control guidelines. In Riyadh, Saudi Arabia, a cross-sectional survey of female dental assistants was carried out. To collect information on knowledge of infection control, a 27-question survey was given out from January to March 2023. Comparisons that were both descriptive and statistical were made. The sample for the study included 125 female dental assistants. Among participants, correctly knew the essentials of infection control scored 88%. The percentage of correct responses for the understanding of personal protective equipment (PPE) was high (97%). The least amount of knowledge (82%) was possessed about sterilizing dental equipment. No statistically significant differences were found between any of the comparisons. With limitations, we concluded from the study that, with an overall score of 88%, the participants were knowledgeable on ways to decrease infection in dental clinics. Promoting infection control practices, risk awareness education, and initiatives that encourage the adoption of all precautions should be prioritized. Dental assistants need to have more information given how crucial infection control is to their field of work.

Keywords: Infection Control, Sterilization, Cross-sectional Studies, Saudi Arabia.

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INTRODUCTION

One of the most significant issues in the world's health care systems is infection. It is one of the most significant factors contributing to morbidity and mortality during clinical, diagnostic, and therapeutic procedures [1]. One of the most important objectives of dental clinical practice should be infection control, and infection control procedures should be continually assessed [2].

Due to the nature of their work and proximity to patients, dental professionals are subject to a number of occupational risks [3]. Knowledge of infection control procedures and practices is related to the probability of occupational exposure to infectious diseases in the dentistry profession [4]. Blood, bodily fluids, droplets, needlestick injuries, contaminated water supplies from the dental units, aerosols, as well as

indirect transmission that happens through contact with infected surfaces and instruments, are just a few of the many ways that an infection can spread at a dental office [5]. This has raised questions about infection control and cross-infection procedures in dental settings, which have been researched in various nations [6]. The risk of cross contamination in dental settings can be considerably decreased by correctly implementing infection control policies and precautions [3]. By using efficient hygiene practices and infection prevention methods in dental clinics, cross-contamination can be avoided [7]. To prevent the transmission of communicable diseases and provide dental care safely, compliance with infection control guidelines is essential [8].

It is crucial that all dental practitioners are knowledgeable with the principles for infection control, as well as the resources and processes that should be

used to ensure that patients and dental staff are adequately protected from infection [9]. To prevent infectious disease transmission by cross-contamination, dental healthcare professionals must adhere to the highest standards of infection control [10, 11].

Dental assistants are responsible of doing these duties and have a crucial role in preventing cross-infection. The aim of this study was to examine dental assistants' knowledge of infection control standards such as infection transmission, personal protective equipment, methods of disinfection and sterilization of dental instruments.

MATERIALS AND METHODS

A cross-sectional study was conducted among female dental assistants working at Ministry of Health governmental dental clinics and private dental clinics in Riyadh city, Saudi Arabia.

The questionnaire, which consists of 27 questions, was created to gather data regarding knowledge of infection control. The World Health Organization and Centers for Disease Control and Prevention (CDC) recommended standard measures were taken into consideration when creating the questions.

There were four categories in this survey: 1) infection transmission and Hand Hygiene, 2) personal protective equipment (PPE), 3) methods of disinfection, and 4) sterilization of dental instruments.

The survey was provided in English, and a convenience sample of a few dental assistants served as

its validation (n=10). The main study did not include the pilot study's participants. A professional opinion was also used to assess the content's validity.

From January to March 2023, the questionnaires were personally distributed, and a total of 125 responses were obtained. The questionnaire was kept anonymous and contained no identifying information to protect the confidentiality and privacy of participants.

Participation was voluntary and all participants completed informed consent forms after receiving information about the study's objectives and prior to participating in it.

Statistical Analysis:

Using IBM SPSS version 25 (IBM, Armonk, NY, USA), the data was analyzed. Excel sheets were used to code each response before being imported into SPSS. Analysis was carried out using descriptive statistics that included frequency, percentages, and means.

The Student's t-test and Analysis of Variance (ANOVA) were used to identify significant differences in the knowledge mean scores of various groups, with P value of < 0.05 considered statistically significant.

RESULTS

There were 125 female dental assistants in the study sample. Table 1 presents the descriptive findings of the demographic information.

Table 1: Demographic characteristics of female dental assistants (n=125)

Variables		Results
Age		Mean 29.7 Years (SD: 4.4)
Hepatitis B vaccination series		N= 122 (97.6%)
Place of work	Governmental MOH Clinics	N= 58 (46.4%)
	Private Clinics	N= 67 (53.6%)
Years of Experience	Mean	8.7 years (SD: 5.2)
	< 5 Years	N= 32 (25.6%)
	6 – 10 Years	N= 45 (36%)
	>10 Years	N= 48 (38.4%)

Table 2 displays the findings of the infection control knowledge assessment. The participants' overall knowledge about infection control was 88%. The understanding of personal protective equipment (PPE)

achieved a high percentage of accurate answers (97%). The sterilization of dental instruments had the lowest knowledge score (82%).

Table 2: The results of the knowledge correct scoring for infection control

Knowledge categories	Knowledge score
Infection transmission and hand hygiene	88%
Personal protective equipment (PPE)	97%
Methods of disinfection	85%
Sterilization of dental instruments	82%
Average knowledge	88%

The outcomes of the comparisons are provided in Table 3. Between all comparisons, there were no

statistically significant differences.

Table 3: The comparisons of knowledge between several groups

Knowledge category	Place of work		P value	Years of experience			P value
	Governmental	Private		< 5 Years	6-10 Years	>10 Years	
Infection transmission and hand hygiene	87%	89%	0.63	84.5%	86%	89%	0.24
Personal protective equipment (PPE)	96%	98%	0.67	96.5%	97.5%	97%	0.53
Methods of disinfection	87%	83%	0.29	85%	84%	86%	0.51
Sterilization of dental instruments	80%	84%	0.11	76%	83.5%	86%	0.17
Average knowledge	87.4%	88.6%	0.71	85.5%	87.8%	89.5%	0.36

DISCUSSION

The intention of infection control standard precautions is to maintain a healthy workplace and prevent the spread of infections to patients and staff of dental clinics [12]. For the prevention of infections, knowledge of protocols, guidelines, and recommendations is essential. According to this study's findings, the included participants knew significantly (88%) about the protocols and recommendations for infection control. Although it should be higher for better healthcare services, a shortage of knowledge may be caused by the insufficient study or continuous learning materials. However, it is undeniable that infection control guidelines and standards have received more attention recently.

Our findings are significantly better than those of a study carried out in Pakistan, where only 58% of the dental assistants were aware of the proper application of alcohol-based hand rubs. In comparison to other studies, our findings revealed 88% correct knowledge of the transmission of infections and hand hygiene [13].

The hepatitis B vaccination series is a requirement for bloodborne infections. The present study's participants had a high vaccination rate (97.6%). Employers must make hepatitis B vaccination for all dental workers essential and maintain ongoing follow-up on this in order to reach full vaccination.

Professionals are protected from exposure by personal protective equipment (PPE), which acts as a barrier against bloodborne infections. Whenever there is a chance of coming into contact with contaminated body fluids and equipment, basic PPE including gloves, masks, and gowns should be accessible and worn [14].

One of the most efficient ways to stop and prevent the spread of disease, together with PPE, is proper hand hygiene. Hand hygiene is a requirement for all healthcare workers who provide patient care. After contacting a patient, coming into contact with blood or other bodily fluids, or coming into contact with contaminated surfaces, it is important to wash your

hands. It is necessary to practice good hand hygiene both before applying and after removing PPE [15].

An in-depth examination of the research on dental employees' compliance with the infection prevention guidelines reveals that infection control methods are adhered to through the validation, compatibility, and maintenance of dental equipment. A systematic review and meta-analysis found that the majority of research findings were based on questionnaire data and that the nature of the analysis was insufficiently accurate to yield significant findings [16]. Data were gathered using methods that were not specific to dental practice in a small number of direct observation trials [17, 18].

There were limitations in this study that must be taken into consideration. Firstly, there were only a few participants. As we did not monitor the participants' actual practice, the responses might not have adequately reflected their true knowledge and compliance. Future studies should look into how well dental assistants are aware of and comply with additional guidelines, such as managing hazardous waste and safeguarding patients.

CONCLUSION

Within the limitations of this study, we can claim that the participants knew how to reduce infection in dental clinics with overall score of 88%.

Priority should be given to promoting infection control methods, risk awareness training, and programs that encourage the use of all measures. Given the importance of infection control in their field of work, dental assistants' level of knowledge needs to be raised.

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