

## EVALUATION OF DENTAL ASSISTANT AWARENESS CONCERNING INFECTION CONTROL POLICY OF BLOOD BORNE DISEASES

Eman Adnan Mustafa<sup>1\*</sup>, Abdul Khaliq Humam<sup>2</sup>, Tabarek Akram Al-Mosuli<sup>3</sup>

1. BDS, MSc, lecturer, Department of Oral & Craniofacial Health Sciences, College of Dental medicine, University of Sharjah, United Arab Emirate.

2. BDS, MSc, lecturer, Department of general and specialist dental practice of Dental medicine, University of Sharjah, United Arab Emirate.

3. DDS, DMD, Ajman University for Science and Technology, United Arab Emirates, University of British Columbia, Canada.

### Abstract

Dental healthcare professionals are at an increased risk of cross- infection during dental treatments. The incidence of certain infectious diseases such as hepatitis B, tuberculosis, and herpes simplex has been significantly high amongst dental professionals, due to the fact that many dental staff fail to implement effective precautions and procedures regarding infection control. The objective of this study is to recognize knowledge level of dental assistants for the purpose of developing infection control training programs.

Sixty-five dental assistants participated in this cross sectional study. The questionnaire consisted of diverse items related to dental infection control protocol. The authors obtained statistics of the returned data by means of a statistical software package.

The results indicated an intermediate degree of familiarity with existing dental infection control guidelines. Dental assistants with high qualifications and more work experience exhibited high levels of intelligence. Both public and private work sector assistants represented equivalent measures.

In conclusion, dental clinics reported moderate levels of compliance with current infection control policies and procedures. Recurrent training, continual inspection, a highly motivated staff, and teamwork are essential for reaching and maintaining high levels of infection control strategies.

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### Introduction

Infection prevention and control are essential to providing a secure environment for patients and staff within a dental practice.<sup>1</sup> Concerns regarding infection control in dentistry have been heightened by the daily risk of contamination or exposure to health hazards, among which is blood pathogens. Both dental care workers and patients are at risk of exposure

to blood borne pathogens, including hepatitis B and C viruses and human immunodeficiency virus (HIV).<sup>2</sup> Transmission of infection within dental surgery may occur by direct contact of tissue with secretions or blood, from droplets containing infectious agents, or via contaminated sharps or dental instruments that have been improperly sterilized.<sup>3</sup>

OSHA (Occupational Safety and Health Administration), along with other regulatory bodies, implement basic techniques to prevent cross-contamination and therefore lower the risk of infection. However, when these measures fail to be vigilantly practiced by the dental team, the level of contamination and cross infection is at stake. Part of the problem lies in the failure of dental staff to implement effective precautions and procedures concerning infection control policy.<sup>4</sup>

#### \*Corresponding author:

Dr. Eman Adnan Mustafa  
College of Dental Medicine, University of Sharjah  
P.O. Box: 27272 Sharjah, United Arab Emirates  
Phone: 00971-50-5395211 (Mobile)  
Fax: 00971-65585641  
E-mail: emustafa@sharjah.ac.ae

The success of dental practice depends principally on the dental assistant (DA), who is the major link between dentist and patient.<sup>5</sup> The DA carries out most practical measures to avoid cross-infection in the surgery<sup>6,7</sup> and it follows that for an assured DA to perform their tasks well, they must have appropriate education, training, and work experience.<sup>8</sup>

The dental assistant has an imperative role in preserving the balance and the adequacy of the infection control procedure. However, based on the current evidence, this role lacks the adequacy in performance (Gordon et al. 2001).<sup>9</sup>

Manifold studies evidence defects in various areas, such as hand hygiene protocol or a misuse/no use of personal protective equipment (Muawia et al. 2006)<sup>10</sup> or insufficient vaccination against hepatitis B (Smith et al. 2008).<sup>11</sup> The lack of time available between patients is also a common reason for undermined infection control protocols. (Sarll et al. 1996).<sup>12</sup> In addition, the level of experience and qualifications play a major part in mastering the art of infection control.<sup>12</sup>

The present study aims to identify the knowledge level of dental assistants in regards to infection control protocols, as well as to gain an understanding of areas in which dental assistants' adherence to guidelines is deficient for the purpose of developing infection control training programs.

### Materials & Methods

The questionnaire requested respondents to provide data regarding age, gender, nationality, qualifications, knowledge, and practice of infection control measures. The study included 65 dental assistants from public (C) and private (P) sectors. Figure 1 show the data in details about age (A= 20-30 year, B= 30-40 year, C= 40-50 year), sex (F = female' M = Male), nationality (A= Philippine, B=Indian, C= Arab, D= African), qualification (A = Dental Assistant, B = Dentist, C= Nurses), work experience (A= less than 2 years, B= 2-5 years, C= more than 5 years), and work sector (C,P).

The survey assessed dental assistants' knowledge regarding: infection control responsibility, knowledge resources, cross infection (CI) and means of transmission of micro-organisms, application of OSHA, aseptic techniques, laboratory asepsis, radiography

asepsis, and disposal of clinical waste.<sup>13&14</sup>

The results were analyzed and interpreted by the authors through means of a statistical software package Microsoft Excel 2007.

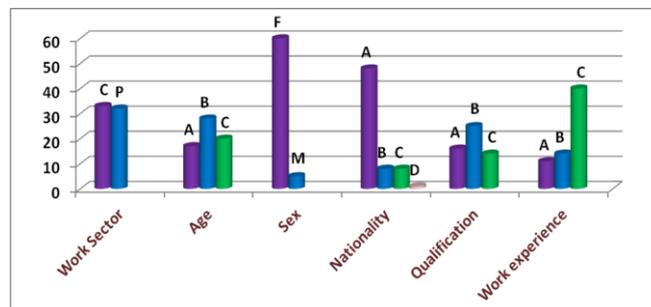


Figure 1. Distribution of Data Sample

### Results

Sixty- five dental assistants (DA) responded to the survey questions. The survey explored knowledge resources of the DA about IC, and more than one choice may have been selected: 70% attending courses, 46% interested in reading articles, and 30% obtained knowledge from their dentists (Figure 2). DAs were asked about their attendance of IC courses: 63% attended regularly, 26% attended irregularly, while the other 11% never attended any courses (Figure 2). The greatest majority of them, 92%, stated that infection control (IC) responsibility is the responsibility of all dental staff while 8% believed that DAs are the main responsible partners (Figure 2).

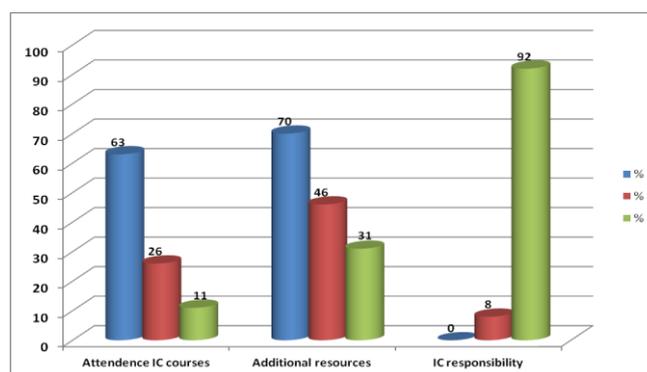
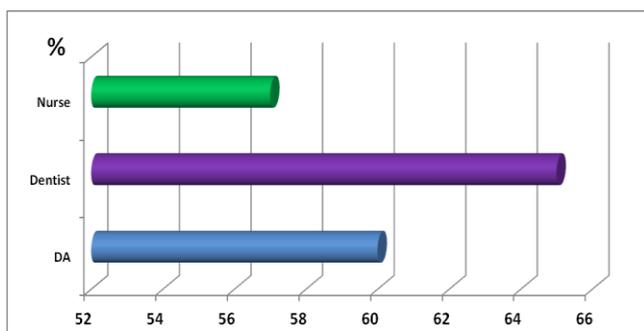


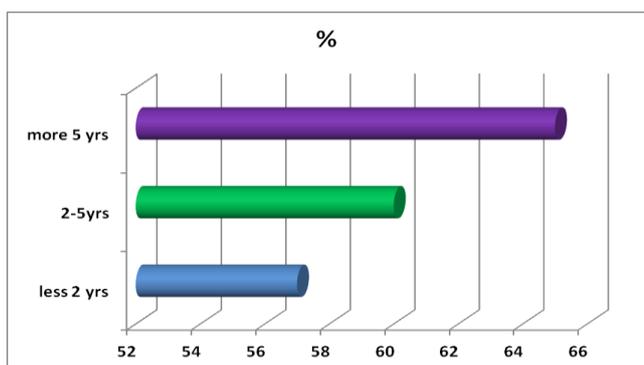
Figure 2. Percentage of Different Knowledge Resources.

The qualification levels of DAs revealed that the knowledge level of DAs with college-level dental qualifications is good compared to others holding nursing and dental assistant licenses (Figure 3).

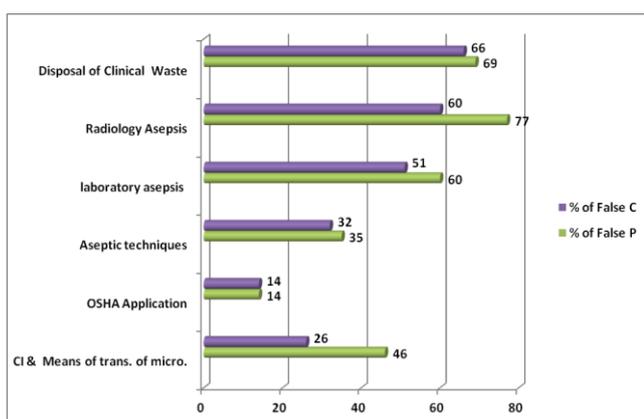


**Figure 3.** The Correlation of Qualifications and Knowledge Level.

Correlation of work experience with acquired knowledge revealed a strong association. The number of work experience years showed that DAs with more than 5 years' experience have satisfactory levels of knowledge when compared with other groups (Figure 4).



**Figure 4.** Correlation of Work Experience and Acquired Knowledge



**Figure 5.** Knowledge Percentage Regarding Different Aspects of IC in Public and private sectors.

Figure 5 illustrates DA knowledge about different aspects of IC in the public and private sectors. The high error responses were about

radiology asepsis, followed by laboratory asepsis, and disposal of clinical waste. The low error responses were related to OSHA applications, followed by aseptic techniques, and means of microorganism transmission. The intelligence level of public DA was good compared to their counterparts in the private sector.

## Discussion

Comprehensive survey information about the state of IC in dental clinics is important for identifying the IC procedures that are least familiar to the DA, so that additional training can be provided.<sup>2</sup> In this study, it is clearly shown that the number of years of experience is directly proportional to the number of accurate answers. This knowledge is reliant on the exposure of the DA to IC courses and to dealing with different specialties, in agreement with a survey conducted in Egypt.<sup>15</sup>

Furthermore, the qualification level of the DA plays a noteworthy role in their performance. DAs with collegiate dental qualifications were proven to have a good knowledge level in comparison to other types of qualifications. This again demonstrates that the unqualified DA needs to be closely supervised to maintain proper standards.<sup>12</sup>

The findings of this survey recorded that 63% of DAs are attending infection control courses frequently, and 92% strongly believed that all dental staff should remain alarmed about infection control guidelines. In spite of the DA information, almost half of the DAs were not carrying out cross-infection control procedures as well as they believed they should.

Studies in the early 1990s indicated that a significant proportion of dental team members believed that the dental practice was not an appropriate setting for the treatment of high risk patients.<sup>16,17,18</sup> This concept has been changed by the implementation of OSHA strategies, where by all patients are treated as potential carriers of pathogenic microorganisms.<sup>9</sup>

The data of this study highlighted the deficiency of DA responsiveness toward radiology asepsis, laboratory asepsis, and disposal of clinical waste. This finding demonstrates the lack of awareness of the DA to the fields that are away from the chair side.<sup>19</sup> Many authors suggested that the poor knowledge

of dental team members was due to their lack of high-risk patient contact or to their lesser likelihood of being prepared to treat infectious patients and their preference to refer such patients to specialized centers.<sup>20,21</sup> Moreover, lack of time can hardly excuse the fact that they could not always carry out accurate procedures between patients.<sup>22</sup> Pressures imposed by too much work in too little time may be important causes of failure in control. Dentists therefore need to assemble work schedules carefully so as to keep away from overloading DAs. This is particularly important if they have not been properly trained to manage their cross-infection control measures in dental practice.<sup>9,22</sup>

This study confirms the need for the DA to practice adequate infection control procedures for all dental items. A further step forward to improve cross-infection control must therefore be to provide regular obligatory education and training for the DA.

### Conclusion

Dental assistants revealed moderate compliance with IC and OSHA policies and procedures. Recurrent training, continual inspection, and a highly motivated staff are essential for reaching and maintaining high levels of IC strategies,

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