

Professional training and knowledge on biosafety by Oral Health Assistants of the public and private sectors

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ABSTRACT

In dentistry, knowledge of biosafety measures related to infection control is a constant concern, since acquired knowledge can be applied to the prevention, minimization, or elimination of health risks. The objective of this study was to verify the relationship between professional training and biosafety knowledge of Oral Health Assistants (OHAs) of the public and private sectors in a city in southwestern Bahia. This is a cross-sectional study involving 44 professionals, 16 from the public sector and 28 from the private sector. A semi-structured questionnaire with 22 questions was used. Data were analyzed using descriptive statistics and a chi-square test. Data analysis revealed that 45.5% of the OHAs had not yet completed a vocational technical training or refresher course, and 77.3% had not registered with the Regional Council of Dentistry. Participants who had received some kind of technical-scientific information showed more knowledge about the meaning of the term biosafety ($p < 0.05$) and performed handwashing more frequently between patients ($p < 0.05$). The public sector professionals showed greater knowledge about the meaning of the term biosafety ($p < 0.05$) and the possibility of disease transmission to patients ($p < 0.05$) compared to those in the private sector. It was observed in this study that better professional training of the OHAs can positively influence the knowledge of biosafety regarding the control of infection.

Descriptors: Professional Training. Dental Professionals. Exposure to Biological Agents.

1. INTRODUCTION

In the dental office environment, biosafety measures are extremely important, since it is a potentially infectious medium due to the presence of biological fluids such as saliva,

blood, and purulent collections. The actions adopted by the staff will allow for the control of infections, the health protection of the care team and clients, and the promotion of health awareness.^{1,2}

Over the years, assistants have taken on a prominent role in the division of dental work when helping dental surgeons (DS) in their activities. The participation of these professionals in the dental context is so important that on December 24, 2008, law No. 11.889, which regulates the exercises of the professions of Oral Health Technician (OHT) and Oral Health Assistant (OHA) in Brazil, was approved by the Brazilian National Congress.³

Given the working conditions and the increasing number of OHAs, measures are needed to ensure quality vocational training that is aimed at eradicating inappropriate practices and reinforcing the implementation of protective measures; these measures result in a reduction of the occurrence of accidents from exposure to biological materials.⁴

Despite the great importance of the work of OHAs, these professionals have not always undergone adequate technical training to perform this function.⁵ Moreover, Brazilian studies analyzing the relationship between vocational training and knowledge about biosafety of these professionals, regarding infection control, are still scarce.

In a study conducted in Germany,⁶ where compliance with recommendations for control of infection by DSs and OHAs and the risk of cross-contamination in the work environment were evaluated, it was demonstrated that only a small percentage of oral health professionals performed hygiene procedures using appropriate practices and that OHAs performed considerably fewer infection control practices.

Due to the importance of OHAs in public and private health sectors, it is necessary to conduct studies that allow for reflection on the vocational training and the performance of these health professionals, especially on actions that involve their knowledge of biosafety with an emphasis in infection control measures, for

individual and collective protection.

From this perspective, the present study aimed at verifying the relationship between the vocational training and knowledge on biosafety of OHAs of the public and private sectors of a municipality in southwestern Bahia.

2 METHODS

This is a cross-sectional study that was conducted with all OHAs over 18 years of age who worked in the public and private sector in a city in southwestern Bahia. The study was approved by the Research Ethics Committee of the State University of Bahia (CEPUNEB), under opinion 472.837.

According to a list provided by the Municipal Health Department, 18 OHAs were active in the Basic Health Units during the study period (January to February, 2015). There were no prior records on the activity of these professionals in the private health care system. The participants of this sector were recruited through a visit to the offices that had been duly registered in the sanitary surveillance of the municipality, according to the list given by the agency. Thus, there were 41 professionals in the private sector.

The data collection questionnaire was an instrument used by Cortelli (2012)⁷ with some adaptations. It is a semi-structured questionnaire with 22 questions on vocational training and basic biosafety knowledge. The analyzed variables were educational level, working time, and level of technical training, as well as knowledge on biosafety, risks of cross infection, infectious diseases, transmission routes, and immunization.

The reading and signing of an Informed Consent Form were requested of the participants, in accordance with resolution No. 466/12 of the Brazilian National Health Council. The participants were instructed and informed about

the anonymity of the information and preservation of identity. The self-administered questionnaires were answered in a private place and then returned. The completed questionnaires were deposited in a sealed classifier with a small lateral opening (simulating a ballot box), which was opened only after the collection of all the data. This procedure prevented the researchers from accessing the questionnaires after each deposit, which ensured the preservation of the participants' identities.

The data obtained were tabulated using the Microsoft Excel 2010 software package and analyzed using the IBM SPSS 22.0 Statistical Package for the Social Sciences (SPSS Inc., Chicago, USA) with the performance of a Pearson chi-square association test (X^2) at a significance level of 5%.

3 RESULTS

Out of the total list of dental offices (57 establishments), eight addresses were not found, nine operated without an assistant, and in five of them, dental activity was no longer performed. During the collection of data, six more private dental offices were found, and they were added to the study, totaling 41 establishments.

The response rate was 84.21% for the public sector (n=16) and 68.29% for the private sector (n=28). Three private health care system questionnaires were excluded due to incomplete answers. In the public sector, one assistant was on vacation, and one unit was not visited because it is rural.

The sociodemographic characteristics of the 44 oral health professionals, all female, are shown in table 1.

Diseases described by study participants as likely to be contracted or transmitted during the practice of their profession are shown in figure 1.

Concerning vaccination against Hepatitis B, it was observed that most professionals (81.8%) had already taken the three recommended doses, 6.8% had not, and 9.1% did not know or did not remember. A total of 61.4% of the interviewees had been vaccinated against influenza, and 34.1% had not. No association between job sector (public or private) and vaccination was observed.

Concerning vocational training, 37.5% (n=6) of public sector professionals and 53.8% (n=14) of private sector professionals had not completed any technical, vocational, training, or refresher course to develop this professional activity. Concerning regular enrollment in the Regional Dental Council, 62.5% (n=10) of the public system professionals and 85.7% (n=24) of the private system professionals had not been enrolled in the registry. Out of the professionals studied, 87.5% (n=14) of the public sector professionals and 35.7% (n=10) of those in the private sector had already attended a course or lecture on biosafety in the health area.

The characteristics related to the knowledge on biosafety of OHAs are presented in table 2. Public sector OHAs showed a better understanding of the meaning of the term biosafety when compared to those in the private sector. They also more frequently attended courses, lectures, and trainings on biosafety ($p<0.05$). The possibility of disease transmission to patients during professional activity was better known by the public-sector professionals ($p<0.05$).

Table 1. Sociodemographic characteristics of Oral Health Assistants

Variable	N	%
Sector		
Public	16	36.4
Private	28	63.6
Age		
18 to 25 years	12	27.3
26 to 35 years	14	31.8
36 to 45 years	13	29.5
46 to 55 years	3	11.4
Gender		
Male	-	-
Female	44	100
Education		
Incomplete Elementary Education	1	2.3
Complete Elementary Education	2	4.5
Incomplete Secondary Education	1	2.3
Complete Secondary Education	30	68.2
Incomplete Higher Education	6	13.6
Complete Higher Education	3	6.8
Working time in a dental office		
Less than 1 year	6	13.6
From 1 to 2 years	8	18.2
From 3 to 5 years	7	15.9
From 5 to 10 years	14	31.8
From 10 to 20 years	8	18.2
More than 20 years	1	2.3
Professional training has been registered in the Regional Council of Dentistry (CRO)		
No	34	77.3
Yes, Oral Health Assistant	7	15.9
Yes, Oral Health Technician /Oral Hygiene Technician	3	6.8
Yes, Dental Prosthesis Technician	-	-
Yes, Dental Prosthesis Assistant	-	-

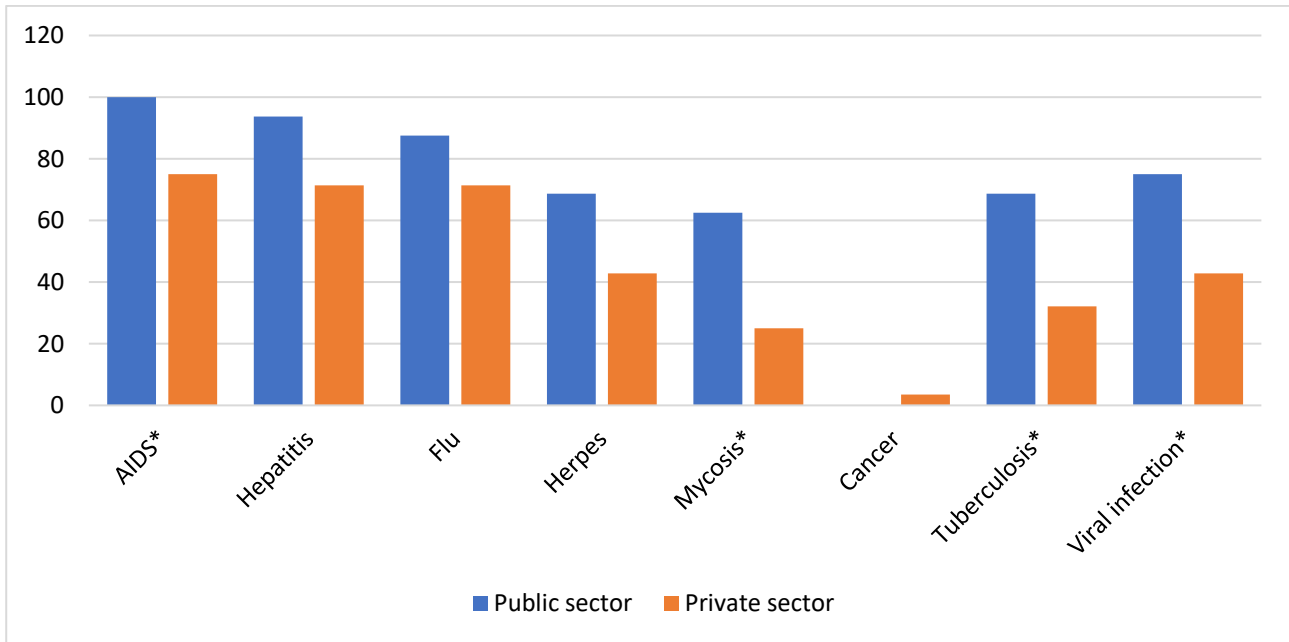


Figure 1. Distribution of OHAs in the public and private sectors regarding knowledge on diseases that can be contracted or transmitted in the dental environment, * $p < 0.05$

Although all of the interviewees used some personal protective equipment (PPE) while working, the public service professionals use PPE more frequently, especially caps ($p < 0.05$) (Figure 2).

The professionals that had already attended some technical, professional, training, or refresher courses to develop dental assistant activities ($n=24$) had also attended a course on biosafety in the health area ($p < 0.05$). These professionals who had already received technical-scientific information ($n=24$) also know more about the meaning of the term biosafety ($p > 0.05$) and wash their hands more frequently in the interval between patients ($p > 0.05$).

The OHAs who declared that they feel safe practicing their profession with the knowledge they have about biosafety are those who have already attended a course, lecture, or training on biosafety in the health area ($p < 0.05$)

and who know what the term biosafety is ($p < 0.05$).

4 DISCUSSION

Technical qualification is associated with greater efficiency, comprehension, and quality in the development of activities, such as biosafety activities, in the clinic and the office.⁸ In this study, professionals who attended a technical, professional, training, or refresher course to conduct oral health assistant activities were more aware of the meaning of the term biosafety ($p < 0.05$) and washed their hands more frequently in the interval between patients ($p < 0.05$). Based on these data, it is possible to infer that better professional training can positively affect the knowledge on biosafety in OHAs and allow a safer practice of their profession, prioritizing basic universal measures such as hand washing between procedures.

Table 2. Knowledge on biosafety of OHAs of the public and private sectors

Variables	Public sector n (%)	Private sector n (%)	P-value
Do you know what the term biosafety means?			
No	2 (12.5)	13 (46.4)	0.022*
Yes	14 (87.5)	15 (53.6)	
Do you think you can contract patients' diseases?			
No	0	5 (17.9)	0.191
Yes	16 (100)	21 (75)	
I do not know/I do not remember	0	1 (4)	
Do you think you can spread any disease to patients?			
No	2 (12.5)	19 (67.9)	0.000*
Yes	14 (87.5)	7 (25)	
I do not know/I do not remember	0	2 (7.1)	
Do you know why materials are sterilized?			
No	0	1 (3.6)	0.550
Yes	16 (100)	26 (92.9)	
Prefer not to respond		1 (3.6)	
Do you know the correct way to discard piercing or cutting materials?			
No	0	3 (12)	0.358
Yes	16 (100)	23 (88)	
I do not know/I do not remember		1 (3.6)	
Prefer not to respond		1 (3.6)	
Do you feel safe to practice your profession using the knowledge you have on biosafety?			
No	0	5 (17.9)	0.257
Yes, to some extent	8 (50)	13 (46.4)	
Yes, completely	8 (50)	8 (28.6)	
I do not know/I do not remember	0	1 (3.6)	
Prefer not to respond		1 (3.6)	
Have you participated in any course on biosafety in the health area?			
No	2 (12.5)	18 (64.3)	0.001*
Yes	14 (87.5)	10 (35.7)	
I do not know/I do not remember	0	0	
Do you wash your hands in the intervals between one patient and another?			
No	0	0	0.652
Yes, sometimes	2 (12.5)	5 (17.9)	
Yes, during all intervals	14 (87.5)	22 (78.6)	
Prefer not to respond		1 (3.6)	
What are the ways to contract or transmit a disease?			
Saliva	12 (80)	18 (64.3)	0.285
Blood	14 (93.3)	27 (96.4)	0.646
Air	11 (73.3)	14 (50)	0.139

*statistically significant result

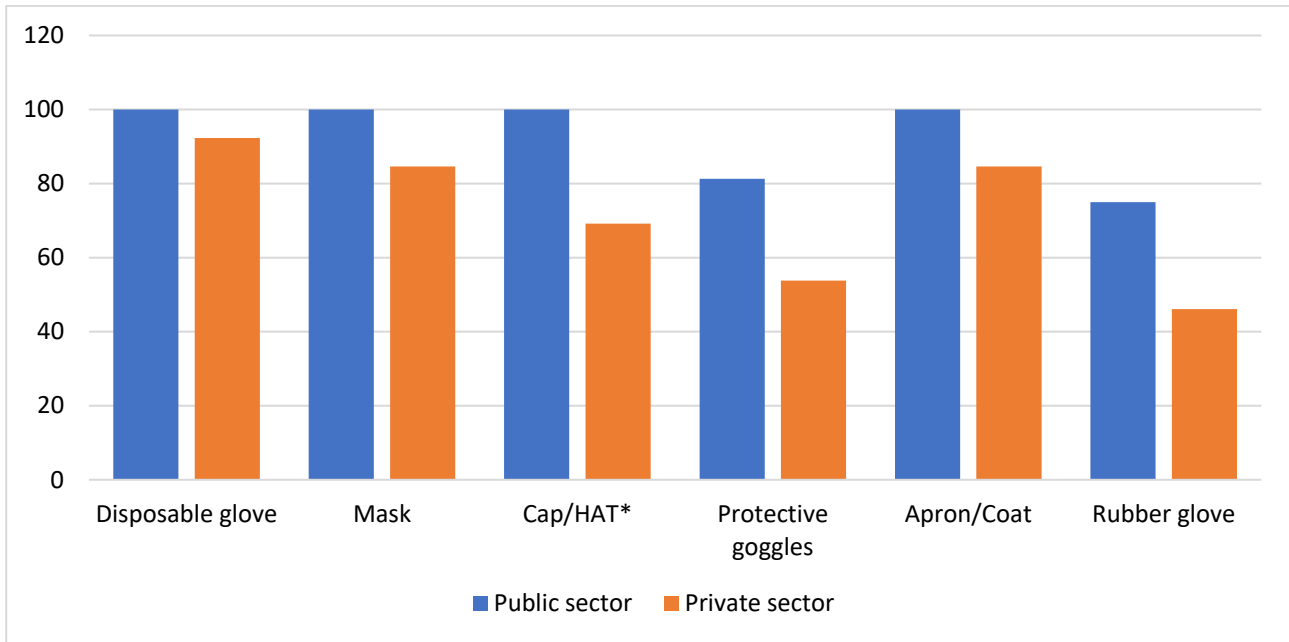


Figure 2. Distribution of OHA of the public and private sectors regarding the use of personal protective equipment (PPE), * $p < 0.05$

On the other hand, a significant number of professionals in this study did not have any technical training. These results lead us to question whether these professionals with no specific technical training are adequately aware of the risks they are exposed to and the susceptibility to these risks in their work environment.

Another study with OHAs⁵ found that only 10% of the oral health assistants attended specialized courses for their function, while 81% had been trained by the DSs. The assistants acquire specific technical skills through courses offered by the Technical Education Centers, duly recognized by the Ministry of Education, during their training. That is why it is wrong for DSs to train the hygienists, contributing to increasing the number of professionals working without qualifications.⁹ Some authors¹⁰ justify such attitudes by saying that it is known that there are not many technical schools that provide the qualifications for assistant professionals and,

since dental treatment requires that all the professionals involved are technically prepared, one solution found by DSs is training offered within the dental office.

It was also observed in the present study that the same OHAs who feel safe practicing their profession with the knowledge they have on biosafety are those who know this term and have already attended a course, lecture, or training on this topic in the health area ($p < 0.05$). The literature¹¹ shows that health professionals who have already attended biosafety courses more frequently attend refresher courses in their professional area, in addition to using PPE, antiseptics, and instrument decontamination. Again, better professional training allows for the performance of safe practices within a healthcare environment such as a dental office.

The city where the present study was conducted is located far from the larger urban areas of the state, and there are often no training courses for OHAs. Despite this

limitation, the data reported are similar to those found in studies conducted in other cities in Brazil that do not have this limitation, with rates of 71% and 61.7% of professionals without proper registration.^{5,10} These data highlight a national reality that deserves attention on the part of all dentistry professionals.

Poor training in this area can result in significant erroneous practices, especially regarding poorly implemented biosecurity practices based on non-acquired knowledge. Furthermore, using professional services not legally authorized or provided by dentistry professionals not regularly registered in the Regional Council of Dentistry (CRO) of their jurisdiction, as provided in section IX of Article 13 of the Dental Code of Ethics (Federal Council of Dentistry), is a breach of ethics.¹²

Researchers¹³ have observed that oral health assistants of the public health sector used PPE more frequently than those of the private health sector and suggest that training courses and the provision of equipment to public sector professionals are responsible for this result. In the present study, the greater knowledge of OHAs of the public sector on biosafety measures in infection control may be because a greater number of these professionals had already attended courses, lectures, and training on biosafety ($p < 0.05$). In a study by Uchida et al. (2016),¹⁴ the group of OHAs acknowledged the importance of attending training courses. Thus, these authors emphasize the need for municipalities to promote training courses for these professionals on a permanent basis, as there is a demand for this service.

The professional training of assistants in the current context of dentistry should be widely discussed to understand the challenges

of understanding the professionals' real competences in health services.¹⁵ OHT and OHA are professional categories directly involved in activities that pose biological health risks, as well as require competencies to perform actions to prevent environmental and health risks. Despite the obligation of OHTs and OHAs to register in the CRO (Law No. 11.889/2008), most of the assistants in this study were not registered, and a considerable number of them had not attended a technical, vocational, qualification, or refresher course to conduct their professional activity. Therefore, it is necessary to investigate the factors that make it difficult to comply with current norms, as well as to strengthen the discussion of this issue to raise awareness, encourage professional training, and facilitate compliance with legislation in a comprehensive manner.

A limitation of this study is the proposed design, since there is no possibility of establishing a causal relationship between the analyzed variables. However, this design allowed for the confirmation of the distribution and characteristics of the investigated variables in this population.

5 CONCLUSION

The professional training of OHAs, expressed in this study with regard to the completion of training and refresher courses, is positively associated with their knowledge of biosafety, especially those related to infection control.

The considerable number of professionals who do not know the term biosafety and who have never attended any form of training course on this topic of the health area, and the low number of professionals registered in the CRO, point out the great necessity of increasing technical qualification so that the OHAs of the studied municipality can

better perform health services, minimizing the risks to their health.

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