

## Attitude towards oral biopsy among general dentists in Murcia

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### ABSTRACT

**Objective:** The present study explores the attitude of general dentists towards oral biopsy as a diagnostic method in application to oral lesions.

**Material and methods:** A questionnaire was administered by mail to 520 general dentists in the Autonomous Community of Murcia (Spain), addressing a number of items: sociodemographic parameters, years of professional experience, the diagnosis of mucosal lesions, the performance of oral biopsies, and their histopathological evaluation.

**Results:** The global response rate was 32.7% (55.9% for males and 43.5% for females), with a global mean age of 35.9 years. Of note is the fact that the group with least professional experience did not include oral biopsy as diagnostic procedure, with statistically significant differences versus the other groups of experience ( $p=0.048$ )

**Conclusion:** The assimilation of oral biopsy as a diagnostic procedure is seen to increase with the number of years of professional experience.

**Key words:** Biopsy, oral pathology, dentists, surveys.

### RESUMEN

**Objetivo:** El objetivo de este trabajo fue investigar la actitud de los dentistas generales hacia el procedimiento de la biopsia oral como método de diagnóstico en las lesiones orales.

**Material y Métodos:** Se envió por correo postal a 520 dentistas generales de la comunidad murciana un cuestionario el que se incluían distintos ítems: sociodemográficos, años de experiencia profesional, el diagnóstico de lesiones mucosas, realización de biopsias orales, estudio histopatológico de las mismas.

**Resultados:** La tasa de respuesta fue del 32,7%, porcentaje que correspondía en un 55,9% a varones y en un 43,5% a mujeres, con una edad media, en conjunto de 35,9 años. Encontramos, como aspecto a destacar, que el grupo de menor experiencia profesional es el que no incluye como procedimiento de diagnóstico la biopsia oral, con diferencias estadísticamente significativas ( $p=0,048$ )

**Conclusión:** Existe un nivel de entrenamiento hacia la biopsia oral con el aumento de los años de experiencia profesional.

**Palabras clave:** Biopsia, patología oral, dentistas, encuestas.

## INTRODUCTION

In routine practice, the clinical diagnosis of oral lesions frequently must be confirmed by different procedures; in this context, an oral biopsy constitutes an essential diagnostic tool in application to patients with oral pathology. The correlation of the clinical findings with the histopathological observations is useful for diagnosing certain oral lesions (1-3).

General dentists must be able to perform simple oral biopsies for the diagnosis of oral lesions. The capacity to differentiate between benign and premalignant or malignant oral lesions is essential for establishing a correct diagnosis. Selection of the type of biopsy required, and of the precise biopsy location, is important in this context. In some situations the dental professional faces the need to ensure complete removal of the lesion instead of only partial excision of the latter. The difference in approach is largely dependent upon the type of lesion involved (4-9).

It must be mentioned that oral biopsy is not limited to the diagnosis of tumors; indeed, the procedure is of great usefulness for determining the nature of all types of lesions. The principal indications of oral biopsy include leukoplakia, erythroleukoplakia, pigmented lesions, ulcers known to be present for more than two weeks (excluding irritative factors), vesicular-ampullar diseases (lichen planus, pemphigus, pemphigoid), soft tissue masses (mucocele, fibrous hyperplasia, etc.), confirmation of systemic illnesses (amyloidosis, Sjögren's syndrome) and periapical lesions (granulomas, residual root cysts), among others (5,9).

In general, the dentist is required to detect and recognize oral lesions and inform the patient accordingly – providing a diagnosis and adequate treatment indications. Dentists therefore must know not only where, when and how to perform a biopsy but also how to manage the information derived from the procedure. On the other hand, it must be taken into account that in some cases patients refuse biopsy, since their main fear is that the resulting report may bring bad news. To resolve this problem it is important to inform the patient of the important benefits of an early diagnosis (10).

The present study explores the attitude of general dentists in the Autonomous Community of Murcia (Spain) towards oral biopsy as a diagnostic method in application to oral lesions.

## MATERIAL AND METHODS

Within the scope of a large study of the professional practice of general dentists in the Autonomous Community of Murcia (Spain), the present sub-study was designed to address professional attitudes towards oral biopsies. A questionnaire was sent by mail to 520 dentists in the region – the inclusion criterion being registration with the Official College of Dentists of Murcia. The study excluded all professionals exclusively dedicated to some dental specialty (oral and maxillofacial surgeons, periodontists, orthodontists, pediatric dentists, endodontists and specialists in oral medicine). Thus, the questionnaire was targeted to general dentists practicing in the mentioned Autonomous Community, in

both the public and private setting. The study was carried out in the period between May-November 2005.

Anonymity in completing the questionnaire was sought in all cases. Initially, it was sent by mail to all the professionals included in the list provided by the Official College of Dentists, along with an introductory letter describing in full detail the type of study involved, and the composition of the investigating team. A second document in turn informed the subjects of the possibility of being informed of the results of the study. In order to preserve anonymity of the responding dental professional, the mailing included two pre-stamped and return addressed envelopes: one for returning the completed questionnaire, and the other containing the request for a summarized account of the results of the survey.

One month later, a follow-up letter was sent to the study subjects, reminding them of the importance of participation, and again requesting their cooperation. A third letter conveying the same message was again sent about two months after this second letter.

The study questionnaire consisted of several item blocks, of which two were central to the present study. More specifically, the first item block addressed sociodemographic and professional aspects (professional filiations, years of professional activity, work setting), while the second explored attitudes towards oral mucosal lesions (i.e., whether or not the dentist diagnosed such lesions; the performing of biopsies as a diagnostic method; whether the dentist personally performed such biopsies or referred the technique to other professionals; and the reasons for not performing biopsies: lack of training or means, etc.).

The questionnaire was previously evaluated by means of a cognitive pre-test procedure to ensure that the questions were opportune and appropriate, understandable and acceptable among the professionals. This pilot survey was targeted to 42 dental professionals selected due to their accessibility and proximity to the investigational team.

Specifically, the study analysis focused on the differences and trends observed in relation to the variable “years of professional experience”, based on the groups generated by the different response categories corresponding to the variables associated with the range of questions relating to diagnostic attitudes (11).

The results were analyzed using the SPSS version 13.1 statistical package. Hypothesis testing adapted to associations and variables of this kind was used. Parametric-type contrasts were not possible (12), since the variable “years of professional experience” did not exhibit a normal distribution, as confirmed by the Kolmogorov-Smirnov test ( $KS = 0.18$ ;  $p < 0.001$ ).

## RESULTS

Of the 520 general dentists to which the questionnaire was mailed, 170 completed and returned the latter. This response rate (32.7%) is undoubtedly low (approximately 1/3). Of the total questionnaires returned, none had to be discarded due to an insufficient number of answered questions (the criterion being less than 50%) or as a result of problems

understanding the questions, or a lack of precision in answering (there were no rectifications or modifications in the returned questionnaires).

There were 95 (55.9%) males and 74 (43.5%) females (this information being missing in only one questionnaire). The mean age of the global series was 35.9 years, with standard deviation (SD) = 10.3. By gender, the mean age was 38.7 (SD = 10.9) for males and 32.3 (SD = 8,1) for females. As to the variable “years of professional experience”, the mean was found to be 10.4 (SD = 8.3). Lastly, in relation to the work setting, 147 of the interviewed professionals (86.5%) were dedicated to private practice, 7 to public practice (4.1%), and 15 worked in both settings (8.8%)(one questionnaire failed to supply this information).

The first question addressing the diagnostic procedure was whether or not the dentist diagnosed oral mucosal lesions.

Of the 169 professionals who answered this question, 159 responded Yes (94.1%), with an average of 10.8 years of professional experience, while 10 responded No (5.9%), with an average of 4.6 years of professional experience.

The second question explored the inclusion of biopsy as a complement to the diagnosis of oral mucosal lesions. A certain balance was observed in this case in the distribution of the three possible answers (biopsies performed: Yes, No, Sometimes), though with slight differences according to the years of experience. In effect, 32.1% responded Yes (with an average of 11.8 years of experience), 35.7% responded No (with an average of 8.3 years of experience), and 32,1% responded Sometimes (with an average of 11.5 years of experience). The differences among the three groups were analyzed by the Kruskal-Wallis test, which yielded significant results for  $\alpha = 0.05$  (KW = 6.05, p = 0.048)(Figure 1).

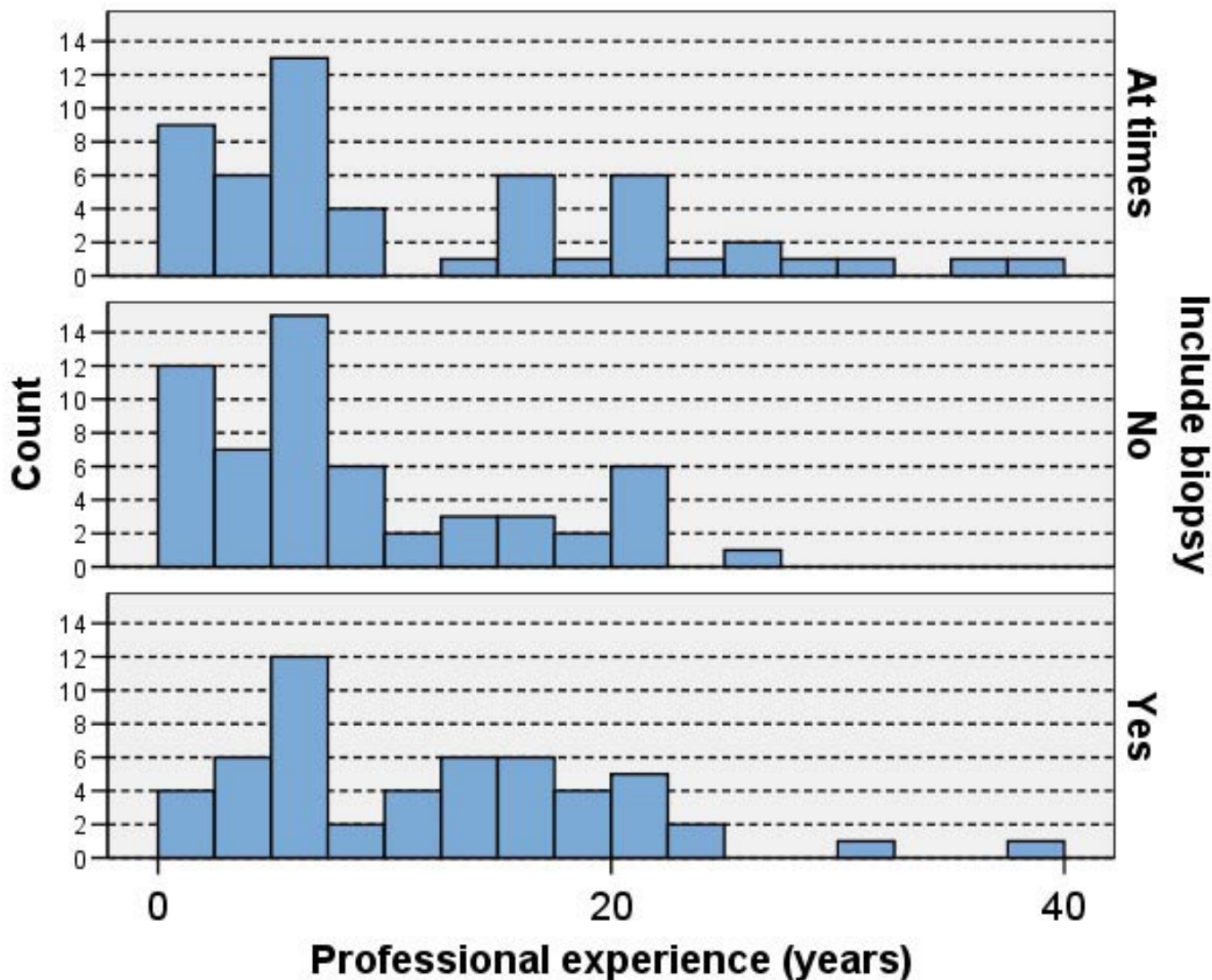


Fig. 1. Inclusion of biopsy for the diagnosis of oral mucosal lesions and years of professional experience.

**Table 1.** Response to the item addressing performance of biopsy by the dentist, with the average number of years of professional experience.

<b>Biopsy personally performed by dentist</b>	<b>Responses (%)</b>	<b>Mean number of years of professional experience</b>
Yes	25 (47.2%)	12.9 (8.7)
No	28 (52.8%)	10.5 (7.1)
Total	53	11.6 (7.9)

**Table 2.** Response to the item addressing the reasons for not performing biopsy, or for performing biopsy only occasionally, with the average number of years of professional experience.

<b>Reasons for not performing biopsy, or for doing so only occasionally</b>	<b>Responses (%)</b>	<b>Mean number of years of professional experience (standard deviation)</b>
Lack of experience	52 (34.9%)	8.7 (7.1)
No lesions noted	35 (23.5%)	11.3 (11.4)
Lack of confidence in interpreting the results	11 (7.4%)	8.5 (4.6)
Lack of material	20 (13.4%)	9.3 (7.9)
Others	31 (20.8%)	10.1 (7.5)
Total	149	9.9 (8.6)
Note: these are 5 multiple response alternatives, as a result of which there are more responses than professionals for this item.		

**Table 3.** Response to the item addressing whether the dental professional submits removed oral lesions for analysis, with the average number of years of professional experience.

<b>When removing an oral lesion, do you send it to be analyzed?</b>	<b>Responses (%)</b>	<b>Mean number of years of professional experience (standard deviation)</b>
Yes	69 (54.3%)	11.1 (8.5)
No	31 (24.4%)	8.5 (7.0)
Sometimes	27 (21.3%)	12.9 (9.2)
Total	127	10.9 (8.4)

The results regarding the question of whether the dentists performed biopsy personally or referred the patient to some other professional are reported in Table 1. The significance of these values was evaluated by the Mann-Whitney U-test ( $U = 279$ ,  $p = 0.295$ ,  $> 0.05$ ).

To determine the most common reasons for not performing biopsy, the questionnaire offered 5 possible answers, with a non-excluding format (Table 2). In this context, the most common response was a lack of practical experience (52 subjects, 34.9%).

The last question was designed to evaluate whether or not the dentists in their daily practice submitted the oral mucosal biopsies for analysis. For the 127 professionals who answered this question, Table 3 shows the distribution of responses and the average number of years of experience associated with each of them. Statistical significance in this case was explored using the Kruskal-Wallis test ( $KW = 4.15$ ;  $p = 0.125$ ,  $> 0.05$ ).

## DISCUSSION

A review of the Spanish literature has revealed no studies similar to our own, exploring professional attitudes among general dentists towards oral biopsy as a diagnostic tool in oral medicine.

The study methodology (mailed questionnaires) has been widely used, though the response rates elicited with this approach are highly variable. Thus, Payne (13) obtained a 71% response rate in a study centered on dentists, while Cowan et al. (14) recorded a 67% response rate. In contrast, Warnakulasuriya and Johnson documented a rate of only 16% (15). The response rate in our study was likewise scantily satisfactory (32.7%), despite the mailing of two reminder letters. This low response rate makes caution necessary in drawing conclusions from the results obtained, and precludes extrapolation of the findings to the global population of dental professionals. Interpretation is therefore confined to those dental professionals who effectively answered the questionnaire.

Despite the efforts of international health organisms in the field of prevention, a relative increase in the incidence of oral cancer has been recorded in the last decades (16). At present, in the United Kingdom, there is an increasing number of lawsuits against professionals, since the latter are responsible for identifying oral lesions and for informing the patients accordingly. Neglect can be assumed in those cases where this is not done, or when the patient is not referred to another center for study (10).

The World Health Organization is adopting important measures to prevent oral cancer. In this context, the oral cavity is easily accessible for exploration, which makes it easier to detect incipient lesions. It is important to identify oral malignancies in the population, particularly among smokers over 40 years of age who visit the dental professional. The causes underlying a delayed definitive diagnosis are associated with both the patient and the professional. In effect, the patient may be unaware of the presence of the lesion (asymptomatic in the early stages). In other cases the patient

may be aware of the lesion but resorts to self-medication or denies its existence out of fear that a visit to the dentist may bring bad news. On the other hand, the professional may not inspect the mucosal membranes on a routine basis, or may minimize the severity of any potential lesions. Likewise, the professional may wish to perform a biopsy but performs the technique incorrectly (obtaining non-representative tissue samples), due to a lack of practical experience.

In the study published by Cowan et al. (14), 94% of the dentists were seen to examine the oral mucosa on a routine basis. However, Diamanti et al. (10) found that 5% of the general dentists had never examined the mucosa oral. These discouraging findings require priority attention in the context of prevention planning – adopting opportune training and/or health care measures to ensure that a complete oral examination is made.

Warnakulasuriya and Johnson (15) found 21% of all general dentists to perform oral biopsies in the United Kingdom. In contrast, Cowan et al. (14) reported a rate of only 12% in Northern Ireland. In our series, 32.1% of the interviewed professionals claimed to resort to oral biopsy as a diagnostic method, though most of them preferred to refer the patient to other qualified professionals or to other centers for this purpose. Dentists must therefore be aware not only of where, when and how to perform a biopsy, but also of when to refer to the patient to a specialized center (17). An important aspect detected in our series is that in routine practice there still are professionals who do not subject the tissue sample to histopathological study. This may be because some of them pay little attention to oral pathology (due to unawareness, a lack of training, etc.).

Finally, emphasis must be placed on the importance of postgraduate training in oral medicine and in diagnostic oral biopsy procedures for general dentists.

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