

Profile of the adult population of the city of Corrientes (Argentina) in relation to dental health insurance.

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Abstract: Objective: To characterize the adult population of the city of Corrientes (Argentina) in relation to dental health insurance according to sociodemographic and dental variables. Materials and Methods: A descriptive cross-sectional study was conducted in the city of Corrientes (Argentina). Information regarding the study variables was collected through the application of a structured survey. Sample size was determined by establishing a 95% confidence level (381 subjects between 35 and 44 years of age). The direct face-to-face observation technique was used for data collection. A simple random sample design was applied for the selection of the homes to be surveyed, which was complemented by a non-probabilistic sampling using quotas for the selection of the individuals to be interviewed from the 2010 Population Census data. Results: Of the total of the participants, 56.4% had dental health insurance. Health insurance was significantly associated with a higher socioeconomic level OR: 1.90 (95% CI 1.26-2.87, $p=0.01$); greater probability of having had a consultation in the 12 months prior to the interview OR: 1.74 (95% CI 1.13-2.68, $p=0.01$), going to the dentist for dental treatments OR: 1.5 (95% CI 1.02-2.43, $p=0.03$), or because of pain or an emergency problem OR: 1.59 (95% CI 1.05-2.42, $p=0.02$), and presenting better oral hygiene self-care. Conclusions: There are oral health inequities in the adult population of the city of Corrientes (Argentina). Having dental health insurance is associated with a higher socioeconomic level, having more frequent dental consultations to get dental treatment and in emergency situations, as well as presenting better oral hygiene self-care.

Keywords: health insurance, health surveys, adults.

INTRODUCTION.

Oral diseases are one of the major public health concerns.¹ Although Argentina spends more than 8% of its GDP on health care services, one of the highest amounts in Latin America,² epidemiological studies in different cities in the country and, in particular in the city of Corrientes,⁵ show a high prevalence of oral pathologies.

In Argentina, the difficulties in achieving an efficient health system capable of meeting the needs of the entire population have been less related to the absence of public policies² and more to the poor coordination amongst the public sector. The Argentinean health system is made up of three poorly integrated and fragmented sectors: the public sector, the compulsory social insurance sector (Obras Sociales) and the private sector.⁶

Dental care coverage is limited in low- and middle-income countries. The limited availability or inaccessibility of these services makes their utilization rates especially low among older adults, people who live in rural areas, and those with low socio-educational status.⁷ The province

of Corrientes has one of the lowest levels of health insurance; 48% of the population does not have any, compared to a national coverage of 36.1%.⁸

Monitoring the access and use of services is important; it is assumed that the use of dental services is directly related to the general oral health status of the population. Individuals who use dental services should be healthier compared to those who do not.⁹ Those who have dental health insurance use dental health services more.^{10,11}

The aim of this study is to characterize the adult population of the city of Corrientes (Argentina) in relation to dental health insurance according to sociodemographic and dental variables.

MATERIALS AND METHODS.

Study design

A descriptive cross-sectional population-based study was conducted in the city of Corrientes, capital of the province of Corrientes, Argentina. The data collection was carried out in 2013 by interviewers instructed in the “face to face” technique of direct observation.

Selection criteria

The unit of analysis corresponded to subjects between 35 and 44 years of age, excluding subjects who had some kind of physical and/or mental disability that impeded them from answering the survey and those with any kind of pathologies or conditions who were unable to perform oral self-care.

Pilot study

A pilot test was performed on 50 subjects with similar characteristics to the study population to validate the questionnaire. This made it possible to identify the need to reformulate some of the questions and to simplify their wording.

Sample size calculation

Sample size was determined based on a universe of 42,242, a 95% confidence level, a 5% margin of error and a 50% *a priori* prevalence. The sample consisted of 381 subjects, 53.5% women.

Sample design

A simple random sampling was applied for the selection of the houses to be surveyed, which was complemented by a non-probabilistic sampling using quotas according to sex. The recorded information in 20% of

the sample was verified.

Study variables.

Dental health insurance: This variable refers to health insurance (Obra Social, private prepaid medical system, adherence to state programs and plans), which includes benefits of dental care. The following question was asked: “*Do you have social dental coverage?*”⁶

Oral hygiene self-care: Dental brushing, daily flossing and the average toothbrush renewal period were considered. The following questions were asked: “*Do you brush your teeth after every meal?*” “*Do you brush your teeth before going to bed?*” “*Do you use floss daily?*” For these questions the answers “*Yes*” and “*No*” were considered. For the question; “*How often do you change your toothbrush?*”, the response options “*Every 3 months or less.*” and “*More than 3 months.*” were considered.

Use of dental services: The questionnaire inquired about the frequency and reasons for the dental consultation. This variable included two questions: “*Did you attend a dental clinic in the last 12 months?*” and “*For what reasons do you generally go to the dentist?*”, with the corresponding answers: 1) For a check up, 2) For dental treatment, 3) Because of pain or other dental emergencies.

Socioeconomic Status (SES): An index already used and validated was used,⁴ it includes the educational level and the occupational category. This status is classified into low, medium-low, medium-medium, medium-high, high.

Statistical analysis: SPSS 21.0 (IBM, USA) and Epidat 3.1 (Dirección General de Salud Pública, Xunta de Galicia, Spain) were used to analyze the data. Absolute and relative frequencies were calculated. The statistical association was assessed using the Odds Ratio (OR) and statistical significance was obtained with the Chi-squared test. A value of $p < 0.05$ was taken as an acceptable level of significance. The same level was used for the estimation of parameters using a confidence interval.

Bioethical considerations: Subjects were asked to give their consent to participate in the study, after having the objectives of the study explained to them and ensuring the anonymity and confidentiality of the answers

The study has the endorsement of the Ethical Research Committee of the School of Dentistry of Universidad Nacional del Nordeste (File No. 04533).

RESULTS.

Dental health insurance was held by 56.4% of the subjects. Female subjects presented a higher proportion, but the differences were not statistically significant with an OR of 1.2 (95% CI 0.86-1.94, $p=0.21$).

As the socioeconomic status increased, so did the number of subjects who had dental health insurance. In order to perform the statistical analysis, the differences in socioeconomic status were grouped into low and medium-low and medium-medium, medium-high and high. Statistically significant differences were found with an OR of 1.90 (95% CI 1.26-2.87, $p=0.01$).

A dental consultation was attended by 67.2% of the subjects during the 12 months prior to the interview. It was observed that subjects who had dental health insurance were more likely to have attended a dental consultation in the 12 months prior to the interview with an OR of 1.74 (95% CI 1.13-2.68, $p=0.01$). 34.6% of the subjects attended a consultation to have dental treatments performed, 38.6% because of pain or other dental emergencies, and 27% for routine check-ups.

Having dental health insurance was not significantly associated with routine dental consultation with an OR of 1.04 (95% CI 0.66-1.65, $p=0.80$). However, a significant association was found in the consultation for dental treatment with an OR of 1.57 (95% CI 1.02-2.43, $p=0.03$) and for the consultation because of pain and other emergencies with an OR of 1.59 (95% CI, 1.05-2.42, $p=0.02$).

Subjects with dental health insurance were more likely to: a) brush their teeth after every meal with an OR of 1.92 (95% CI 1.25-2.96, $p<0.01$); and before going to bed with an OR of 1.97 (95% CI 1.07-3.65, $p=0.02$); b) renew their toothbrush in the period recommended by the American Dental Association (ADA), *i.e.*, every 3 months with an OR of 1.60 (95% CI 1.05-2.45, $p=0.02$); and c) daily use dental floss with an OR of 1.67 (95% CI 1.06-2.64, $p=0.02$).

DISCUSSION.

In this study, the percentage of subjects who had dental health insurance was close to that reported by the National Institute of Statistics and the Census for the province of Corrientes (Argentina), whose data indicate that 52% of the population between 35 and 44 years of age has health insurance.

International evidence points out the influence of socioeconomic factors on oral health and shows the existence of inequities in healthcare.¹¹⁻¹³ In this study, having dental health insurance was significantly associated with a higher socioeconomic status. Dental health insurance is an important determinant of the use of dental services.¹⁴ A dentist was consulted by 40.9% of subjects with dental health insurance in the 12 months prior to the interview. These results contrast with a study conducted in Sweden and Denmark, where dental visits every 6 months among the population were universal.¹⁵ On the other hand, 26.2% of the study population without dental health insurance consulted a dentist. Similar results were obtained by a study carried out in China, which reported that a quarter of the subjects had visited a dentist in the previous 12 months.¹⁶

In countries with public coverage of health services, there is less inequality in the use of dental health services compared to countries without public coverage.¹⁷ In this study, it was found that subjects without dental health insurance, despite having free access in the public sector, were less likely to have consulted a dentist in the 12 months prior to the interview. In that sense, the possible causes and/or obstacles that limit the use of dental services offered by the public sector should be analyzed.

On the other hand, having dental health insurance does not mean that subjects do not pay for any of the services, since most of the benefits are not covered in full.¹⁸ This may explain in part the existence of a percentage of subjects who have dental health insurance, and who have not had a consultation in the 12 months prior to the interview.

Subjects who have dental health insurance request more dental treatment. However, the interpretation of the effect of this variable on outcomes is somewhat limited, given the prevalence of mutilating treatment (extraction) over conservative treatment in developing countries. The less privileged subjects require more dental extractions, influenced by cultural patterns.^{19,20} In developing countries, health services are mostly directed only to providing emergency care and interventions targeting certain age groups.²¹

In this study, people who have dental health insurance have better oral health self-care. This could be related to the possibility of greater access to health services, where they receive advice on appropriate oral hygiene practices.

On the other hand, a higher SES would allow access to

the necessary elements for improving oral hygiene practices. In other words, the prevalence of preventive behavior is often greater among the higher social groups.²² Also, unlike medical care, dental health insurance only limitedly covers preventive dental care, resulting in a prevalence of curative treatments.²³

Some limitations must be taken into account when interpreting the results. The information collected in the survey is indirectly self-reported by an informant, which can introduce a bias of memory and/or social desirability. On

the other hand, as it is a cross-sectional design, it is not possible to assume causality in the observed associations.

CONCLUSION.

There are inequities in oral health care in the adult population of the city of Corrientes, Argentina. Having dental health insurance is associated with a higher socioeconomic status, and therefore with more frequent consultations for dental treatment and in emergency situations, and with better oral hygiene self-care.

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