ORAL HEALTH STATUS AND ORAL HEALTH-RELATED QUALITY OF LIFE IN PREGNANT WOMEN FROM SOCIALLY DEPRIVED POPULATIONS

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ABSTRACT

The aim of the present work was to explore whether there is a relationship between oral health status and oral health-related quality of life in pregnant women from socially deprived populations in Buenos Aires City. Eighty pregnant women (age18-39 x=25.19±6.56) in their 1st/2nd trimester were sampled from the population of women visiting a health center located in the south of Buenos Aires City for their pregnancy check-ups. The impact of oral disease was assessed using the Spanish validated version (López, 2006) of OHIP-49 (Slade and Spencer, 1994), which includes 49 items grouped into 7 domains. Each question has five possible answers, to which values ranging from 1 to 5 were assigned. To assess oral health status, 4 calibrated researchers performed a clinical examination and recorded: Gingival Index (Löe and Silness, 1963); depth on probing, clinical attachment level, bleeding on probing and DMFT discriminating its components. Variables were analyzed in the population as a whole and in groups regarding previous dental attention (presence of fillings). Statistical analysis included: Chi Square test to establish association between variables and t-test to compare groups. 93.75% of the patients showed clinical signs of gingivitis, 2.5% showed clinical signs of periodontitis. Mean DMFT was 12.24±6.48 (D/DMFT=6.46±4.64; M/DMFT=4.09±4.31; F/DMFT=2.53±3.52); 73.3% of the patients had at least one missing tooth; 92.1% presented active caries lesions; 53.7% had at least one filling. Most frequent impacts were reported in the domains: psychological discomfort (59.9%=frequent concern about dental problems) and functional limitation (51.1%= frequent perception that "a tooth did not look good"). Oral health status and oral health-related quality of life showed no significant association. Domains involving functional limitation (p<0.04) and physical disability (p<0.01) showed higher levels of impact in the group of patients with previous dental care (presence of fillings).

Oral health-related quality of life did not reflect health status; nevertheless, it may be an intervenient variable regarding demand for dental service.

Key words: *quality of life, pregnant women, oral health status.*

SALUD BUCAL Y PERCEPCIÓN DE IMPACTO EN CALIDAD DE VIDA EN GESTANTES CON VULNERABILIDAD SOCIAL

RESUMEN

El objetivo del trabajo fue establecer la situación de salud bucal y explorar su relación con la percepción de impacto en la calidad de vida en gestantes pertenecientes a poblaciones vulnerables de la Ciudad Autónoma de Buenos Aires.

La muestra estuvo constituida por 80 gestantes (edad 18-39 años x=25,19±6,56) cursando el 1º/2º trimestre del embarazo que concurren a un centro de salud de la zona sur de CABA para sus controles obstétricos. Para evaluar el impacto de la condición bucal sobre la calidad de vida se administró el cuestionario OHIP-49 (Slade y Spencer, 1994) validado al español (López, 2006), que incluye 49 preguntas agrupadas en siete dominios. Cada pregunta admite respuesta dentro de 5 categorías. Se asignó un valor (1 a 5) a cada respuesta. Para evaluar la situación de salud, 4 odontólogos calibrados realizaron exámenes clínicos y registraron: Índice Gingival (Löe y Silness, 1963); profundidad al sondaje, nivel de inserción clínica, sangrado al sondaje y CPOD con componentes discriminados. Las variables fueron analizadas en la población en su conjunto y por grupos según atención odontológica previa (presencia de obturaciones). Se utilizaron: la prueba de Chi cuadrado (c^2) para establecer asociaciones entre variables y el test t de student para comparaciones. El 93,75% de las pacientes presentaron signos clínicos de gingivitis, 2,5% presentaron signos clínicos con periodontitis. La media del CPOD fue de 12,24±6,48 (C/CPOD=6,46±4,64; P/CPOD=3,74±4,8; O/CPOD=2,07±2,98) 73,3% de las gestantes presentó al menos una pieza dentaria ausente; 92,1% presentó caries activas; 53,7% presentó al menos una pieza dentaria obturada. Los impactos citados con mayor frecuencia se registraron en los dominios malestar psicológico (59,9%=preocupación frecuente por problemas dentales) y limitación funcional (51,1%=percepción frecuente "que un diente no se veía bien"). No se registraron asociaciones entre la percepción de impacto y la presencia de caries o gingivitis. La percepción de impacto en los dominios limitación funcional (p<0,04), dolor físico (p<0,01) e impedimentos físicos (p<0,03) fue significativamente mayor en aquellas pacientes que presentaron piezas dentarias obturadas en el examen clínico.

El estado de salud bucal de la población estudiada mostró una elevada prevalencia de patología bucal (caries dental y gingivitis).La percepción de impacto sobre calidad de vida no reflejó el estado de salud, sin embargo, podría ser una variable interviniente en la demanda de servicios.

Palabras clave: *calidad de vida, gestantes, salud bucal.*

INTRODUCTION

Pregnancy is a period during which the body undergoes major physiological changes, which may be associated to the onset of alterations in oral health status. However, pregnancy alone does not cause disease. Disease is influenced by behavioural factors related to lifestyle, quality of life and environment, which, in association with biological factors, condition the onset and worsening of oral diseases. Changes in the oral cavity associated to pregnancy include alterations affecting soft and hard tissues. Epidemiological studies report an increase in gingivitis in pregnant women and worsening of clinical signs. A series of extrinsic and intrinsic changes take place during pregnancy, including changes in diet, hormonal and microbiological changes, and alterations in the immune response, making pregnant women more vulnerable to periodontal disease and dental caries.[1] Untreated oral health problems may compromise the general health of mother and child. Extensive epidemiological surveys have concluded that over 50% of pregnant women have oral health problems, and at the same time, make little use of either medical or dental health services[2].

Social deprival is associated to people's biological and psychological characteristics, social and environmental conditions, life cycle, family structure and functionality, affecting people's lives in terms of possibilities and opportunities. In socially deprived settings, maternity faces particularly fragile conditions[3].

Oral diseases are not usually fatal, nevertheless mouth/tooth pain, problems with eating, chewing, smiling and social relationships due to teeth or mouth problems tend to have a substantial effect on individual wellbeing[4]. The WHO defined quality of life as an individual's perception of their position in life in the context of the socio-cultural and value systems in which they live, in relation to their goals, expectations, standards and concerns, which are interrelated to each other in a complex way and to physical health, psychological state, degree of Independence, social relationships and religious beliefs[5].

Oral health is an important mediator in quality of life, particularly regarding its psychological component[6], which is why indicators have been created for specific use in dentistry. These types of indicators of oral health-related quality of life enable estimation of the social and functional impact of oral diseases, translation of findings into objective clinical measures and assessment of the effectiveness of dental treatments, which are all useful measurements for improving the quality of health services[7,8].

Quality of life[4] is a concept linked to subjectivity, to the way each subject perceives and defines his/her own wellbeing. DeBoer [9] refers to the study of health-related quality of life as the assessment of the "effects of a disease and its treatment on patients' lives". It may influence individual behaviour and social practices, which may increase or reduce exposure to risk factors and influence whether the patient seeks healthcare, and is thus a variable affecting the health-disease-care process.

The aims of this study were to determine oral health status and explore its relationship with perception of impact on quality of life in pregnant women from socially deprived populations in Buenos Aires City.

MATERIALS AND METHODS

A cross-sectional study was performed over one year on pregnant women 18 years old or over who visited Health Centre number 9 in La Boca neighbourhood, Buenos Aires City, for their prenatal checkups. The study was approved by the Ethics Committee of the School of Dentistry of Buenos Aires University.

The sample included 80 pregnant women 18 to 39 years old ($x=25.19\pm6.56$) who were in the 1st/2nd trimester of pregnancy. The sample number is equivalent to 40% of the pregnant women who were attended to during the period. Patient participation in the study was voluntary after signing a written informed consent.

The following procedure was used to select the sample. Firstly, a socially deprived area was selected[10] – La Boca neighbourhood, one of the 5 most socially deprived neighbourhoods in Buenos Aires City.

The area's reference health centre (CESAC Nº 9) was selected according to the quality of its monitoring of the population in its catchment area.

The pregnant women were included consecutively until the sample size was attained.

With regard to the representativeness of the sample selected, the graphs show that compared to the population of pregnant women who seek healthcare, there was no statistically significant difference in terms of age distribution or migrant condition (Fig. 1).

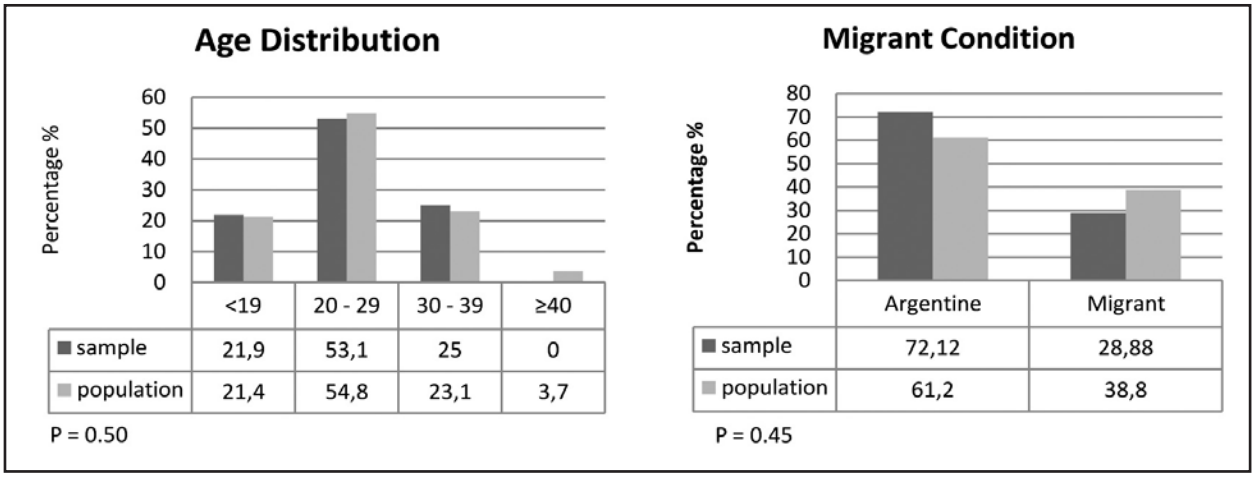

Fig. 1: Sample Features regarding migrant condition and age compared to population characteristics. (Data source: Las embarazadas en los centros de salud y el plan médico de cabecera. Informe de las personas atendidas en el año 2008. Estadísticas para la salud departamento de análisis estadístico, Ciudad Aut. De Buenos Aires).

Four calibrated dentists performed clinical examinations and recorded the following indicators in order to establish the oral health status of the pregnant women:

a) *Gingival-periodontal condition*: Loë-Silness Gingival Index[11], probing depth, clinical attachment level and bleeding on probing, considering 8 sites per tooth. No radiographic study was performed.
   To define presence of gingivitis in individuals, the criteria established by the *International Workshop for a Classification of Periodontal Diseases and Conditions, 1999*[12] were used: presence of clinical signs of inflammation (GI ≥ 1) associated to bleeding on probing at least one site with clinical attachment level ≤ 2.
   Presence of periodontitis was considered for individuals who had 3 sites with clinical attachment loss ≥ 3 mm[13].
b) Dental condition: DMFT and DMFS, discriminating their components[14] .
c) The OHIP questionnaire[15], which measures people's perceptions regarding the social impact of mouth disorders on their wellbeing, was used to determine the impact of oral status on quality of life. Version OHIP-49 was used, which contains 49 questions capturing seven conceptually formulated dimensions based on Locker's theoretical model of oral health[16] adapted from the WHO framework for classifying impairments, disabilities and handicaps. This questionnaire was validated in Spanish by Lopez and Baelum in 1994[17].
   Each question has 5 possible answers (never, rarely, sometimes, often and always). A score (1 to 5) was assigned to each answer.

Statistical processing

The following were calculated: frequency distribution, measures of central tendency and dispersion of variables analyzed. The Chi-square test (c^2) was used to establish associations between the perception of the impact of oral health on quality of life and variables of oral health status.
The variables of oral health status which were significantly associated to the perception of impact were used as a criterion to define comparison groups. The t-test for independent samples was used to establish the significance of the comparisons.

RESULTS

Gingival-periodontal condition

According to the criteria established for the gingival-periodontal diagnosis, 93.75% of the patients had clinical signs compatible with a diagnosis of gingivitis; 2.5% had clinical signs compatible with a diagnosis of periodontitis.

Dental condition

The mean number of teeth affected by caries (DMFT) was 12.24±6.48 (D/DMFT=6.46±4.64; M/DMFT= 3.74±4.8; F/DMFT=2.07±2.98) (Table 1).
65.8% of the pregnant women had at least one missing tooth; 92.1% had active caries; 53.7% had at least one filling.

Table 1: Dental Status: descriptive measures regarding caries experience.

	N	Min	Max	Mean	SD	SE
Decayed (DMFT)	80	0	19	6.46	4.64	0.53
Missing (DMFT)	80	0	24	3.74	4.8	0.54
Filled (DMFT)	80	0	16	2.07	2.98	0.34
DMFT	80	0	28	12.24	6.48	0.74
Decayed (DMFS)	80	0	80	13.04	16.09	1.85
Missing (DMFS)	80	0	120	18.68	24.14	2.77
Filled (DMFS)	80	0	80	4.61	9.95	1.15
DMFS	80	0	130	37.28	30.95	3.55

Perception of impact of oral health on quality of life

The impacts mentioned most frequently were in the domains of psychological discomfort, functional limitation and physical pain (Fig. 2).

The impacts most frequently identified by the pregnant women corresponded to the following items in the questionnaire:

51.1% said they always or often "noticed that a tooth did not look good.

59.9% said they were always or often concerned about dental problems.

62.22% said that they have always or often expressed concern about their oral health.

Statistically significant associations were recorded between 2 domains in the questionnaire (functional limitation $c^2 = 4.02$ $p < 0.04$ and psychological discomfort $c^2 = 6.52$ $p < 0.01$) and the presence of fillings (F component of DMFT). No statistically significant association was found between perception of the impact – in any of the domains in the questionnaire – and dental and gingival-periodontal conditions.

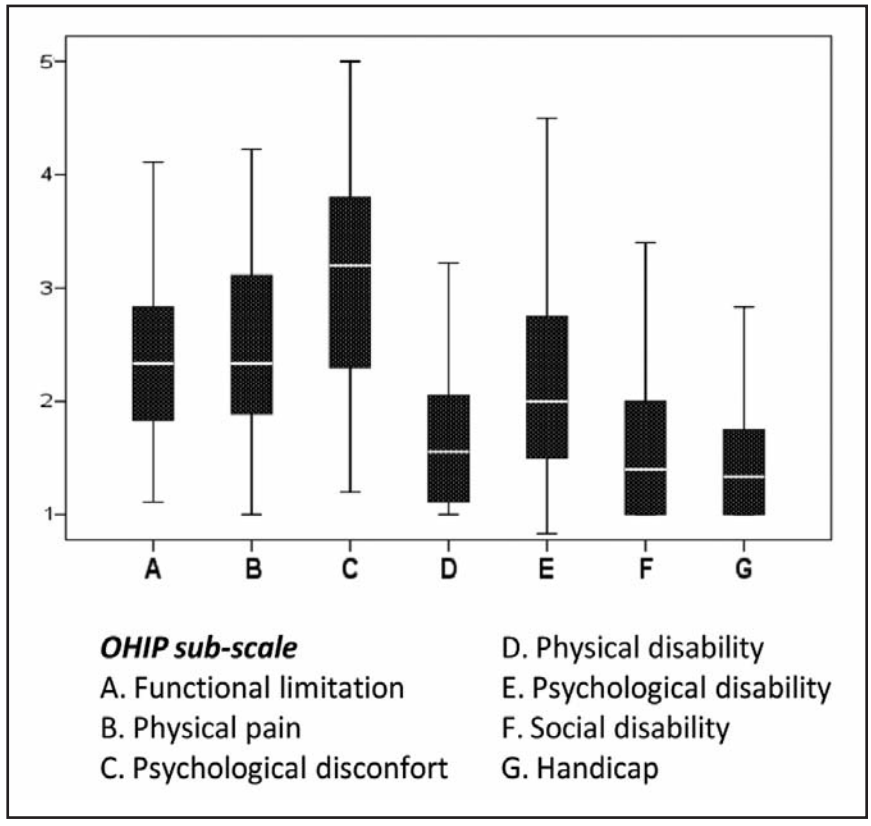

Fig. 2: Oral health-related quality of life: frequency distribution of the answers to OHIP-49 questionnaire regarding its conceptual dimensions (sub-scale).

The comparison of indicators between the groups of pregnant women defined according to the presence of fillings (group 1 F/DMFT ≥ 1; group 2 F/DMFT = 0) showed statistically significant differences in the number of missing teeth ($p<0.02$), which was higher in group 1, and number of decayed teeth ($p<0.03$), which was higher in group 2 (Table 2). For those patients in group 1, the perception of impact was significantly greater in the domains functional limitation ($p<0.04$) and psychological discomfort ($p<0.01$) (Fig. 3).

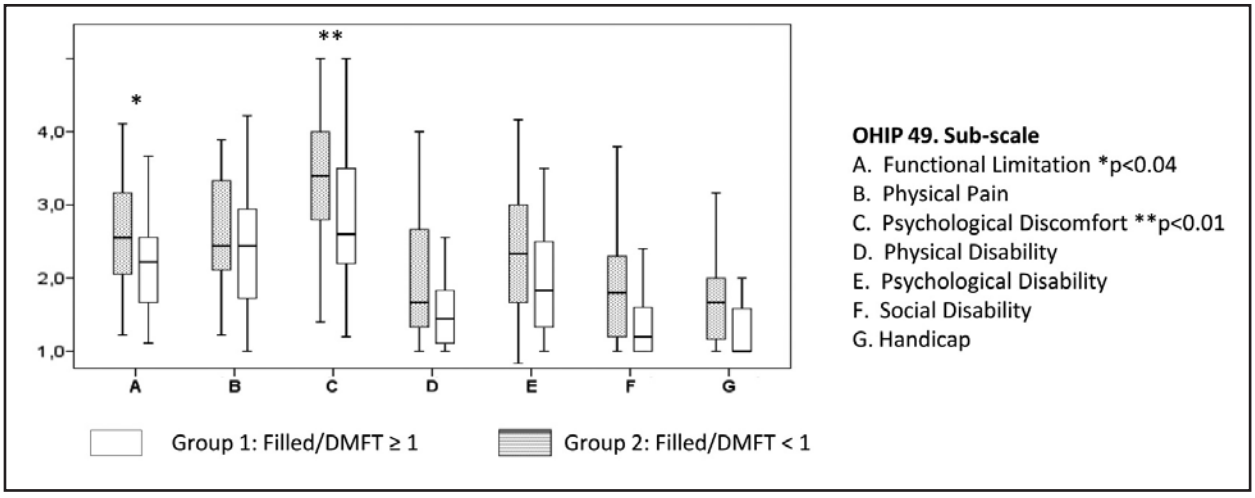

Fig. 3: Oral health-related quality of life in groups according to restorative experience.

Table 2: Dental Status in groups according to restorative experience.

	Group 1 F/DMFT ≥ 1 N = 43 Mean ± SE	Group 2 F/DMFT = 0 N = 47 Mean ± SE	
DMFT	13.90 ± 0.97	10.03 ± 1.07	ns
DMFS	40.80 ± 6.28	29.59 ± 4.87	ns
Missing (DMFT)	4.78 ± 0.73	2.35 ± 0.65	p = 0.02
Decayed (DMFT)	5.34 ± 0.65	7.68 ± 0.84	p = 0.03

DISCUSSION

The health-disease-care process for the oral component of health is a complex network of factors that interact in various ways in different social groups. Thus, different groups within the same society have different disease profiles, types and frequency[18]. This study focused on a section of the population in an urban area, considering two criteria related to conditions of vulnerability: being a pregnant woman and being socially deprived.

The oral health status of the population studied showed high prevalence of oral pathology.

With regard to dental status in this population of pregnant women from socially deprived groups, high caries prevalence was found, which affected 92.1%. Mean number of decayed teeth was 6.46 ± 0.53. Descriptive studies performed by the same research group in 2003, about one decade ago, showed similar data for populations of pregnant women from socially deprived groups: 6.34 ± 0.73 in the 1st "belt" of Greater Buenos Aires and 8.47 ± 0.92 in the southern zone of Buenos Aires City. (unpublished data) Altogether, 54.7% of the pregnant women had evidence of restorative dental care (fillings).

With regard to the gingival-periodontal health of the pregnant women, 93.75% had clinical signs of gingivitis. Although hormonal influence affects both the inflammatory response and the constitution of the biofilm, plaque is still the main etiological factor in the genesis of gingivitis, and thus, strongly associated to factors inherent to lifestyle such as hygiene practices. Prevalence of gingival-periodontal disorders during pregnancy reported in the literature, based on clinical observation, ranges from 35% to 100% Studies such as *Ziskin*[19] on 416 pregnant women found that 38.9% had some form of gingivitis, *Löe*[20] found that 100% of the women had signs of gingival inflammation, *Arafat*[21] found 76.7% and *Bernard* [22] 36% of moderate to mild gingivitis. The results of epidemiological studies of prevalence of gingival-periodontal diseases in individuals vary greatly[23]. It should be considered that in order to diagnose and classify individuals as patients with or without periodontitis, epidemiological studies on adult individuals have used a wide range of diagnostic systems. Moreover, the heterogeneity in definitions of periodontitis has a serious impact on the determination of the prevalence of periodontitis[24]. Thus, differences in the prevalence of gingival-periodontal diseases are probably a result of technicalities (indicators, ways of measuring and definitions of disease) rather than of any real difference in the distribution of the pathology.

Exploration of the perception of impact on quality of life showed that although a high percentage of pregnant women had oral health problems, only a lower percentage recognized impacts on their quality of life, and in turn, the perception of impact was not directly associated to the oral health situation. However, the patients with fillings expressed a higher level of perception of impact in 2 of the 7 domains in the questionnaire, even though they had a significantly lower number of teeth with active caries lesions. This study also found that the group of pregnant women with previous restorative care also had a higher number of missing teeth. This might suggest that the perception of impact may be associated to a higher demand for dental care in this group within the population.

People tend to initiate the process of care when certain symptoms appear, which are evaluated as highly justified. The decision to seek help is a process that usually begins with the perception of some discomfort or need for care and may or may not conclude with an actual healthcare visit. Perceptions of these needs are not a direct expression of the biological plane, but are mediated by a system of categories of perception, classification and attribution of meaning to bodily sensations. These are conditioned by links to the health system and the threshold of perception of bodily sensations, both in direct relationship to the objective conditions of people's lives[25].

Becoming diseased, attending to and preventing disease should be viewed not only as processes whose definition is based on certain specific, specialized professions and institutions, but also as social facts regarding which social groups need to build actions, techniques and ideologies, part of which are professionally organized. Both the complaints and the responses to them are structural processes in the whole system and social group, and consequently, these systems and social groups will not only generate representations and practices, but will also build a structure of knowledge for facing, living with, resolving, and, if possible, eradicating the complaints[26].

CONCLUSION

The oral health status of the population studied showed high prevalence of oral pathology (dental caries and gingivitis). The perception of impact on quality of life did not reflect the health status of pregnant women; nevertheless, it could be an intervening variable in the demand for services.

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