

## Impact of oral health on the quality of life of Paraguayan adults.

### Impacto de la salud oral en la calidad de vida de adultos paraguayos.

Clarisse Díaz-Reissner.<sup>1</sup>  
Juan Roldán-Merino.<sup>2-5</sup>  
Irma Casas García.<sup>6-8</sup>

#### Affiliations:

<sup>1</sup>Facultad de Odontología. Universidad Nacional de Asunción. Asunción, Paraguay.

<sup>2</sup>Campus Docent. Sant Joan de Déu-Fundació Privada. Barcelona, Spain.

<sup>3</sup>Universitat Autònoma de Barcelona. Barcelona, Spain.

<sup>4</sup>Rovira i Virgili University of Tarragon. Tarragona, Spain.

<sup>5</sup>Research Group GEIMAC (Group Consolidat 2014-1139: Grupo de Estudios de Invarianza de los Instrumentos de Medida y Análisis del Cambio en los Ámbitos Social y de la Salud). Barcelona, Spain.

<sup>6</sup>Departamento de Pediatría, Obstetricia y Ginecología y Medicina Preventiva. Universitat Autònoma de Barcelona. Barcelona, Spain.

<sup>7</sup>Preventive Medicine Servic. Hospital Germans Trias i Pujol. Barcelona, Spain.

<sup>8</sup>Research Group Innovation in Respiratory Infections and Tuberculosis Diagnosis (Group Consolidat 2017 SGR 494).

**Corresponding author:** Clarisse Díaz-Reissner. Facultad de Odontología. Universidad Nacional de Asunción. Avenida España c/ Brasil N° 430. Asunción, Paraguay. **E-mail:** [cdiazr@odo.una.py](mailto:cdiazr@odo.una.py)

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**Abstract:** **Introduction:** Alterations in the oral cavity can affect people's quality of life, hence it is important to determine how the individual perceives their own health. **Objective:** To determine the oral health-related quality of life in adults who received dental care at establishments managed by the Ministry of Public Health and Social Welfare of Paraguay, the School of Dentistry of Universidad Nacional de Asunción, and the "Chacarita" Community Center, in Paraguay, in the first quarter of 2017. **Material and Methods:** A cross-sectional study was carried out. The Paraguayan version of the Oral Health Impact Profile (OHIP-14Py) was used. Spearman's correlation, Kruskal-Wallis, and Mann-Whitney tests were used to relate the impact of oral health with demographic, labor, educational, and clinical variables. **Results:** 333 subjects participated in the study. The most affected domains were physical pain, psychological distress, and psychological disability. The correlation between OHIP-14Py and DMF-T was positive but poor ( $r=0.236$ ;  $p<0.001$ ). The oral health-related quality of life was significantly lower in subjects with abnormal oral mucosa ( $p=0.020$ ), presence of TMJ symptoms ( $p=0.026$ ), need for prostheses ( $p<0.001$ ), higher level of severity of DMF-T ( $p<0.001$ ), use of upper ( $p=0.004$ ) and lower ( $p<0.001$ ) prostheses, and absence of functional dentition ( $p<0.001$ ). **Conclusion:** Primary and secondary preventive measures should be promoted since oral health status can negatively influence people's quality of life and may even cause total inability to carry out daily activities.

**Keywords:** *quality of life; oral health; self-concept; sickness impact profile; adult; Paraguay*

**Resumen:** **Introducción:** Alteraciones de la cavidad bucal pueden repercutir en la calidad de vida, por eso resulta importante considerar cómo percibe el individuo su propia salud. **Objetivo:** Determinar la calidad de vida relacionada con salud oral en adultos que recibieron atención odontológica en establecimientos del Ministerio de Salud Pública y Bienestar Social,

Facultad de Odontología de la Universidad Nacional de Asunción y Centro Comunitario "Chacarita", en el primer trimestre del 2017. **Material y Métodos:** El diseño fue transversal. Se utilizó la versión paraguaya del Perfil de Impacto de Salud Oral (OHIP-14Py). Se aplicó correlación de Spearman, pruebas de Kruskal-Wallis y Mann-Whitney para relacionar el impacto de la salud bucal con variables demográficas, laborales, académicas y clínicas. **Resultados:** Participaron 333 sujetos. Los dominios más afectados fueron dolor físico, malestar psicológico e incapacidad psicológica. La correlación entre el OHIP-14Py y el CPO-D fue positiva pero escasa ( $r=0,236$ ;  $p<0,001$ ). La calidad de vida relacionada con salud oral fue significativamente menor en sujetos con

mucosa oral anormal ( $p=0,020$ ), presencia de síntomas en la ATM ( $p=0,026$ ), necesidad de prótesis ( $p<0,001$ ), mayor nivel de severidad del CPO-D ( $p<0,001$ ), uso de prótesis superior ( $p=0,004$ ) e inferior ( $p<0,001$ ) y ausencia de dentición funcional ( $p<0,001$ ). **Conclusion:** Se deben promover medidas preventivas primarias y secundarias, ya que el estado de salud oral puede influir negativamente en la calidad de vida, pudiendo inclusive generar incapacidad total para realizar actividades diarias.

**Palabras Clave:** *calidad de vida; salud bucal; autopercepción; perfil de impacto de enfermedad; adulto; Paraguay.*

## INTRODUCTION.

Oral diseases can have an impact on people's quality of life and well-being. If left untreated, they can cause pain and discomfort, affecting their physical, psychological, and even social functions.<sup>1</sup> Considering the above, in 2017 the World Dental Federation (FDI) proposed a new concept of Oral Health that includes a person's values, perceptions, and expectations, which reflect physiological, social, and psychological attributes that are fundamental to quality of life, due to the person's experiences, perceptions, expectations and capacity of adaptation to the circumstances.<sup>2</sup>

The Oral Health-Related Quality of Life (OHRQoL) has become an essential indicator of a person's oral health status, since it can affect daily activities in a negative way, resulting in disability or handicap in some serious cases.<sup>3</sup>

Given that the OHRQoL measurement is subjective, in the first conference held in 1998,<sup>10</sup> measurement instruments were presented, whose psychometric properties were satisfactorily demonstrated.<sup>4</sup> One of the most used is the Oral Health Impact Profile (OHIP). Its short version was developed in English by Slade in 1997.<sup>5</sup>

The Paraguayan version was validated in 2017.<sup>6</sup> Regarding OHRQoL, a study of oral health-related quality of life in older adults who lived in a state shelter in the metropolitan area was conducted in Paraguay using the Geriatric Oral Health Assessment Index questionnaire (GOHAI), where negative self-perception was associated with the need for a lower prosthesis, drug use, lack of dental treatment, and periodontal status self-assessment.<sup>7</sup>

In children aged 11 to 14 years, it was measured using the Child Perceptions Questionnaire for children aged 11 to 14 years (CPQ11-14). A physical and emotional impact was reported,<sup>8</sup> but there are no published studies on oral health-related quality of life in Paraguayan adults.

Therefore, the aim of this study was to determine the oral health-related quality of life in adults aged 18 to 59 who received dental care in establishments managed by the Paraguayan Ministry of Public Health and Social Welfare, the School of Dentistry of Universidad Nacional de Asunción, and the "Chacarita" Community Center, in the first quarter of 2017. Its importance lies in determining how oral health problems impact the daily life of the Paraguayan adult population.

At the national level there are no studies on the DMF-T Index in adults, so the oral health condition of this population is unknown, and the studies published on OHRQoL are scarce, especially in children and older adults.

For this reason, little is known about the health status of the Paraguayan adult population.

## MATERIALS AND METHODS.

### A cross-sectional study was conducted.

Adults treated at the dental clinics managed by the Paraguayan Ministry of Public Health and Social Welfare (MSPyBS, for its acronym in Spanish) the School of Dentistry of Universidad Nacional de Asunción (UNA), and the “Chacarita” Community Center in the months of January, February and March 2017 were part of the study.

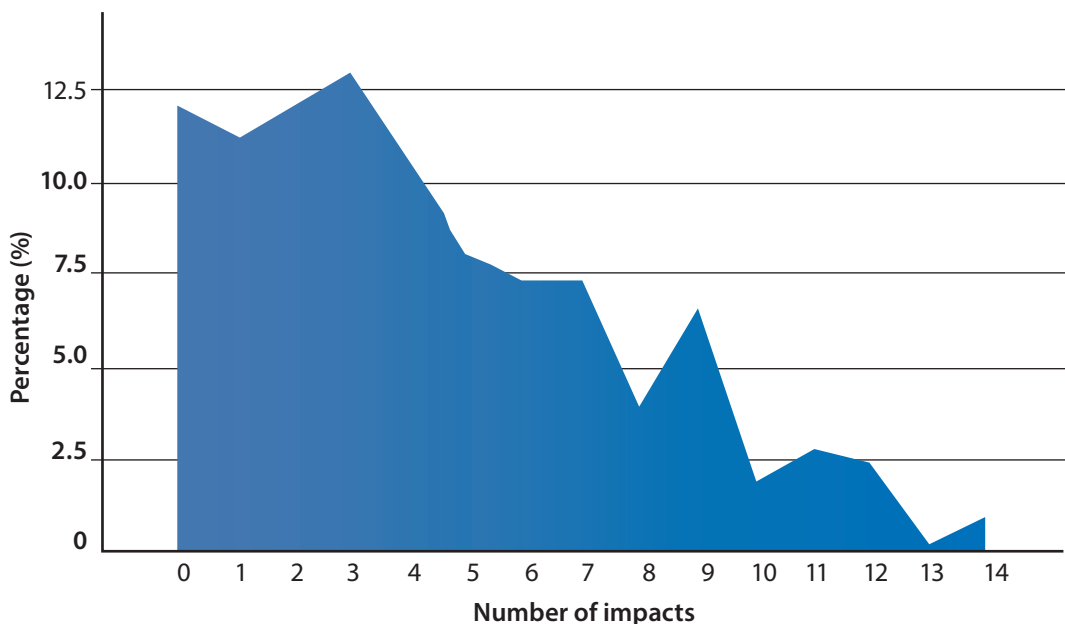
The medical establishments are located in the cities of Asunción and Pirayú. Foreigners with a residence of less than 15 years in the country were excluded from the study. To calculate the sample size, a total of 542,895 adults in the cities of Asunción and Pirayú<sup>9</sup> were considered, using as a reference the variance of 49 obtained in the DMF-T index of the pilot test.

With a precision of 7% and with a 95% confidence level, it was necessary to recruit a minimum of 188 patients, but considering a 15% loss of data, 221 patients were included in the study. The sampling was of consecutive cases until obtaining the required sample size. The patients were invited to participate in the study and asked to sign the informed consent. The autonomy of the person was respected, being free to participate or withdraw from the study without affecting the care they were receiving at each institution.

A questionnaire was applied, and the oral examination was carried out by two calibrated dentists (Cohen's Kappa=0.87). The questionnaire was applied through an interview and included demographic characteristics (age, gender, origin, residence, marital status), educational background, and type of employment (completed studies, job occupation, income level, and access to private health services).

The oral examination consisted of evaluating the oral health status (condition of the teeth and of soft and periodontal tissues, TMJ signs and symptoms, and DMF-T index). In addition, patients self-assessed their oral health status and answered the Oral Health

**Graphic 1.** Number of impacts of the OHIP-14Py by patients.



**Table 1.** OHIP-14Py according to demographic, educational, and employment data. Paraguayan adults, first semester of 2017.

|   | Variables                  | Mean | SD   | p-value |
|---|----------------------------|------|------|---------|
| <b>Demographics (n=333)</b>                     |                            |      |      |         |
| Age   | 18 a 29 years              | 10.3 | 9.5  | 0.923   |
|   | 30 a 39 years              | 11.3 | 10.6 |         |
|   | 40 a 49 years              | 11.8 | 12.0 |         |
|   | 50 a 59 years              | 11.6 | 10.3 |         |
| Gender  | Female                     | 11.5 | 10.6 | 0.099   |
|   | Male                       | 9.3  | 8.9  |         |
| Place of origin                                 | City of Asunción           | 10.8 | 10.1 | 0.635   |
|   | Central Department         | 8.5  | 7.2  |         |
|   | Interior of the country    | 11.9 | 11.1 |         |
|   | Outer area of the country  | 9.1  | 10.5 |         |
| Residence                                       | City of Asunción           | 11,4 | 10,4 | 0.503   |
|   | Central Department         | 10,7 | 11,3 |         |
|   | Interior of the country    | 10,3 | 8,0  |         |
| Civil status                                    | Single                     | 10.5 | 10.0 | 0.734   |
|   | Married                    | 11.7 | 10.2 |         |
|   | Cohabiting                 | 12.3 | 11.1 |         |
|   | Widow/er                   | 16.0 | 18.1 |         |
|   | Separated                  | 5.6  | 9.8  |         |
|   | Divorced                   | 9.5  | 7.0  |         |
| Sample  | School of Dentistry UNA    | 11.1 | 9.5  | 0.190   |
|   | MSPyBS City of Asunción    | 9.8  | 7.4  |         |
|   | MSPyBS City of Pirayú      | 15.3 | 12.3 |         |
|   | Community Center           | 10.7 | 10.7 |         |
| <b>Educational level and employment (n=333)</b> |                            |      |      |         |
| Educational level                               | None                       | 10.8 | 11.9 | 0.404   |
|   | Primary                    | 12.8 | 11.2 |         |
|   | Secondary                  | 10.6 | 9.4  |         |
|   | Tertiary                   | 10.0 | 10.4 |         |
| Type of employment                              | Financially dependent      | 11.0 | 10.1 | 0.019*  |
|   | Public or private employee | 13.2 | 10.7 |         |
|   | Free-lance                 | 9.4  | 9.9  |         |
|   | Retired                    | 7.2  | 7.7  |         |
| Income (n=214)                                  | ≤1 MW                      | 12.8 | 10.6 | 0.059   |
|   | >1 MW to 2MW               | 12.1 | 10.7 |         |
|   | >2 MW                      | 6.9  | 6.5  |         |
| Use private health services                     | Yes                        | 11.5 | 10.0 | 0.089   |
|   | No                         | 10.1 | 10.7 |         |

\*: Statistically significant. Mann-Whitney U and Kruskal-Wallis H tests. **UNA:** Universidad Nacional de Asunción. **MW:** Minimum Wage = 1,964,507 Guaranies = 358.74 Dollars (1 USD = 5,476.10 PYG as of March 31, 2017). **MSPyBS:** Ministry of Public Health and Social Welfare of Paraguay. **SD:** Standard deviation.

Impact Profile questionnaire in its short version of 14 items (OHIP-14Py) to measure the impact of oral health on their quality of life.

The Paraguayan version of the OHIP-14Py questionnaire was used.<sup>6</sup> The subjects were asked how often they had experienced an impact on the oral health from an item in the questionnaire, in the last 6 months. The answers to the questions were placed on a 5-point Likert scale according to the frequency with which the problem occurred (4=very often; 3=often; 2=occasionally; 1=rarely; and 0=never).

The total score was obtained from the sum of all individual item scores for the 14 questions. To obtain the mean score, the sum of the item scores within each conceptual dimension was divided. Higher scores on the questionnaire indicate poorer oral health-related quality of life.

Statistical analyses were performed using the IBM SPSS 22.0 program. The oral health-related quality of life according to demographic, educational, and employment variables was compared using Pearson's Chi-square test; the same test was used to measure

**Table 2.** Response per question from the OHIP-14Py. Paraguayan adults, first semester of 2017.

| Question   | Never | Rarely | Occasionally | Often | Always | Total |
|--|-------|--------|--------------|-------|--------|-------|
| 1. Did you have trouble pronouncing words?             | 284   | 4      | 30           | 6     | 9      | 333   |
| Percentage (%)   | 85.3  | 1.2    | 9.0          | 1.8   | 2.7    | 100.0 |
| 2. Did you stop enjoying the taste of food?            | 269   | 12     | 36           | 8     | 8      | 333   |
| Percentage (%)   | 80.8  | 3.6    | 10.8         | 2.4   | 2.4    | 100.0 |
| 3. Did you have pain in your mouth or teeth?           | 144   | 23     | 122          | 20    | 24     | 333   |
| Percentage (%)   | 43.2  | 6.9    | 36.6         | 6.0   | 7.2    | 100.0 |
| 4. Did you feel uncomfortable eating any type of food? | 139   | 23     | 108          | 26    | 37     | 333   |
| Percentage (%)   | 41.7  | 6.9    | 32.4         | 7.8   | 11.1   | 100.0 |
| 5. Did you feel insecure?                              | 180   | 16     | 73           | 28    | 36     | 333   |
| Percentage (%)   | 54.1  | 4.8    | 21.9         | 8.4   | 10.8   | 100.0 |
| 6. Did you feel nervous?                               | 197   | 13     | 67           | 19    | 37     | 333   |
| Percentage (%)   | 59.2  | 3.9    | 20.1         | 5.7   | 11.1   | 100.0 |
| 7. Did you stop eating something?                      | 241   | 6      | 26           | 19    | 41     | 333   |
| Percentage (%)   | 72.4  | 1.8    | 7.8          | 5.7   | 12.3   | 100.0 |
| 8. Did you have to interrupt meals?                    | 214   | 11     | 53           | 16    | 39     | 333   |
| Percentage (%)   | 64.3  | 3.3    | 15.9         | 4.8   | 11.7   | 100.0 |
| 9. Did you have difficulty resting?                    | 244   | 8      | 48           | 8     | 25     | 333   |
| Percentage (%)   | 73.3  | 2.4    | 14.4         | 2.4   | 7.5    | 100.0 |
| 10. Were you ashamed?                                  | 172   | 13     | 78           | 23    | 47     | 333   |
| Percentage (%)   | 51.7  | 3.9    | 23.4         | 6.9   | 14.1   | 100.0 |
| 11. Did you get nervous around other people?           | 268   | 3      | 33           | 14    | 15     | 333   |
| Percentage (%)   | 80.5  | .9%    | 9.9          | 4.2   | 4.5    | 100.0 |
| 12. Did you have difficulty doing daily activities?    | 288   | 3      | 22           | 8     | 12     | 333   |
| Percentage (%)   | 86.5  | .9%    | 6.6          | 2.4   | 3.6    | 100.0 |
| 13. Did you feel that your life got worse?             | 262   | 13     | 33           | 5     | 20     | 333   |
| Percentage (%)   | 78.7  | 3.9    | 9.9          | 1.5   | 6.0    | 100.0 |
| 14. Did it prevent you from doing daily activities?    | 306   | 1      | 11           | 7     | 8      | 333   |
| Percentage (%)   | 91.9  | .3     | 3.3          | 2.1   | 2.4    | 100.0 |

**Table 3.** OHIP-14Py according to clinical variables.  
 Paraguayan adults, first semester of 2017.

| Variables                             | OHIP-14Py               | Mean (SD)     | p-value     |
|---------------------------------------|-------------------------|---------------|-------------|
| Symptoms of TMJ                       | Yes                     | 6.50 (5.18)   | $p=0.026$   |
|                                       | No                      | 5.26 (5.17)   |             |
| Self-perception of oral health status | Poor                    | 10.37 (6.79)  | $p<0.001^*$ |
|                                       | Moderate                | 6.17 (4.70)   |             |
|                                       | Good                    | 4.67 (4.38)   |             |
|                                       | Very good               | 3.12 (4.06)   |             |
|                                       | Excellent               | 4.29 (4.36)   |             |
| Need for upper prosthesis             | None                    | 4.71 (4.61)   | $p=0.001^*$ |
|                                       | Unitary unilateral      | 4.51 (4.30)   |             |
|                                       | Unitary bilateral       | 7.30 (5.69)   |             |
|                                       | Multi-unitary           | 7.56 (5.82)   |             |
|                                       | Unitary + Multi-unitary | 6.13 (9.03)   |             |
|                                       | Complete                | 7.16 (5.83)   |             |
| Need for lower prosthesis             | None                    | 3.97 (3.99)   | $p<0.001^*$ |
|                                       | Unitary unilateral      | 5.09 (4.24)   |             |
|                                       | Unitary bilateral       | 8.58 (7.15)   |             |
|                                       | Multi-unitary           | 5.79 (5.74)   |             |
|                                       | Unitary + Multi-unitary | 4.76 (5.02)   |             |
|                                       | Complete                | 3.50 (4.30)   |             |
| Molar relationship (n = 274)          | Normal                  | 10.53 (10.30) | $p=0.509$   |
|                                       | Semi Cusp               | 12.78 (11.53) |             |
|                                       | Full cusp               | 10.07 (8.32)  |             |
| Severity level of the DMF-T Index     | Very low                | 6.12 (6.21)   | $p<0.001^*$ |
|                                       | Low                     | 9.86 (9.57)   |             |
|                                       | Medium                  | 12.18 (10.78) |             |
|                                       | High                    | 16.94 (11.81) |             |
| Use of upper prosthesis               | Yes                     | 12.81 (11.16) | $p=0.004^*$ |
|                                       | No                      | 9.42 (9.21)   |             |
| Use of lower prosthesis               | Yes                     | 12.79 (11.08) | $p<0.001^*$ |
|                                       | No                      | 7.94 (7.93)   |             |
| Dental aesthetics index               | Mild                    | 9.70 (8.90)   | $p=0.627$   |
|                                       | Evident                 | 10.87 (10.77) |             |
|                                       | Serious                 | 10.65 (9.97)  |             |
|                                       | Very serious            | 12.22 (10.76) |             |
| Click of the TMJ                      | Yes                     | 10.84 (9.93)  | $p=0.866$   |
|                                       | No                      | 11.23 (10.66) |             |
| Pain on palpation of the TMJ          | Yes                     | 12.00 (8.60)  | $p=0.191$   |
|                                       | No                      | 10.99 (10.45) |             |
| Reduced mobility of the TMJ           | Yes                     | 14.44 (10.70) | $p=0.177$   |
|                                       | No                      | 10.61 (10.21) |             |
| Lesions in the oral mucosa            | Yes                     | 11.44 (10.70) | $p=0.020^*$ |
|                                       | No                      | 10.61 (10.21) |             |
| Extraoral appearance                  | Normal                  | 14.83 (13.22) | $p=0.127$   |
|                                       | Abnormal                | 10.76 (10.03) |             |
| Functional dentition                  | Yes                     | 9.61 (9.39)   | $p<0.001^*$ |
|                                       | No                      | 15.07 (11.77) |             |

\*: Statistically significant. Mann-Whitney U and Kruskal-Wallis H tests. **TMJ**: Temporomandibular Joint. SD: Standard deviation.

**Table 4.** OHIP-14Py by subscales according to self-perception of oral health and DMF-T index. Paraguayan adults, first semester of 2017.

| OHIP-14Py<br>Subscales   | DMF-T |                    |         |
|--------------------------|-------|--------------------|---------|
|                          | Mean  | Standard deviation | p-value |
| Functional limitation    | 0.78  | 1.53               | <0.001* |
| Physical pain            | 2.67  | 2.26               | 0.331   |
| Psychological distress   | 2.23  | 2.46               | <0.001* |
| Physical disability      | 1.80  | 2.53               | 0.020*  |
| Psychological disability | 1.96  | 2.13               | <0.001* |
| Social disability        | 0.87  | 1.75               | 0.003*  |
| Handicap                 | 0.75  | 1.70               | <0.001* |

\*: Statistically significant. Spearman correlation analysis.

the level of impact per question. The Mann-Whitney U and Kruskal-Wallis H tests were used to compare the oral health-related quality of life with the clinical variables. The Spearman correlation test was used to contrast the oral health self-assessment and the DMF-T index by the domains of the OHIP-14Py. All tests were applied with a confidence level of 95%.

## RESULTS.

The sample consisted of 333 patients with ages ranging from 18 to 59 years old, with a mean of 35-13 years, females accounted for 77.2%, a little less than half completed high school, 71.0% had income lower than the minimum wage, and only 36.0% had access to private health care services.

The oral health-related quality of life showed a significant difference by educational level and type of employment (Table 1). The aspect with the greatest impact on the oral health-related quality of life, that is, the question that obtained the highest frequency in the category “always” was being ashamed of some problem in their mouth with 14.1%.

The question with the least level of compromise, that is, with the highest number of responses being “never” was whether a problem in their mouth prevented them from performing daily activities with 92.2% (Table 2).

The clinical variables that were statistically

significant with a lower oral health-related quality of life were: need for upper and lower prosthesis, level of severity of the DMF-T, use of upper and lower prosthesis, the presence of lesions in the oral mucosa, and absence of functional dentition (Table 3).

Considering the mean of each dimension according to the impact on the oral health-related quality of life, physical pain came in first place, psychological discomfort in second, and psychological disability in third place. The total mean was 1.58±0.59.

The DMF-T Index was correlated with all subscales except for physical pain (Table 4).

The most frequent number of impacts was 3 (Graphic 1). 88.0% presented at least one impact on their oral health-related quality of life in the last 6 months due to problems in their mouth.

## DISCUSSION.

The aim of this study was to determine the oral health-related quality of life in Paraguayan adults who received dental care in the first quarter of 2017. The most affected domains were physical pain, psychological discomfort, and psychological disability.

The oral health-related quality of life was significantly lower in subjects with the need for an upper and lower prosthesis, a level of severity of the DMF-T, use of an upper and lower prosthesis,



the presence of lesions in the oral mucosa, and the absence of functional dentition.

Regarding the questions, shame due to problems in their mouth had a greater impact on daily life, which does not agree with the results obtained in Paraguayan adolescents.<sup>8</sup> This could be due to the frequent consumption of beef at the country level, which could be reflected in decreased chewing capacity, which in turn may make them feel embarrassed.

The most affected domains were physical pain, psychological discomfort, and psychological disability, similar to the findings reported in a Brazilian population.<sup>10</sup> It also coincides with a study carried out in Saudi workers and Australian adults, where the most affected domains were physical pain and psychological discomfort,<sup>11,12</sup> and with physical pain but not with disability in older Brazilian adults.<sup>13</sup>

Also, it coincides with Paraguayan adolescents from 11 to 14 years old, where physical pain was the most important functional limitation,<sup>8</sup> as well as Saudi adults<sup>14</sup> and Canadian adults residing in rural areas regarding pain and psychological discomfort.<sup>15</sup> It also coincides with the domain of psychological distress in older Brazilian adults;<sup>16</sup> but it does not agree with Chinese and Mexican older adults where functional limitation was the most affected domain.<sup>17,18</sup>

This indicates that pain in the teeth or in the oral mucosa is what primarily affects the patient, so special attention should be paid to patients suffering from chronic diseases whose oral health is compromised, since their oral health-related quality of life will be seriously affected. It must be considered that significant cross-cultural differences may occur, hence it is important to measure the impact through the perception of the individual, since it will direct oral health care strategies, especially in developing countries where, generally, health care needs are not fully covered.

On the other hand, the oral health-related quality of life was significantly lower in subjects in need of an upper and lower prosthesis, level of severity of the DMF-T, use of upper and lower prosthesis, the

presence of lesions in the oral mucosa, and absence of functional dentition.

In a study carried out in adults, their oral health-related quality of life was affected when having more than 10 missing teeth,<sup>19</sup> which agrees with this study, where the absence of functional dentition, considering the presence of fewer than 20 teeth, was also statistically significant. In addition to all this, it has been found that tooth loss without replacement causes low self-esteem and affects the person's quality of life.<sup>20,21</sup>

Therefore, reaching an advanced age with healthy natural teeth will be beneficial for the patient as it will help them to maintain anatomy, function, and reduce the psychosocial impact.<sup>22</sup> The absence of functional dentition was statistically significant in this study, in agreement with a study conducted on Saudi adults where they concluded that the greater the dental loss, the poorer the oral health-related quality of life.<sup>23</sup> In addition, the negative self-assessment of the oral health status, which, as in this study, was associated with a lower oral health-related quality of life in adults from southern Africa.<sup>24</sup>

In this study, the mean score of the oral health-related quality of life questionnaire (OHIP-14Py) was  $11.06 \pm 10.32$  similar to that reported in Brazilian adults aged 24 to 60 years with  $10.21 \pm 11.6025$ , but much lower than those reported in Chilean adults who were  $33.29 \pm 12.0526$ .

On the other hand, in the present study, no difference was found in the oral health-related quality of life according to place of origin or residence, which differs from the results of a study carried out in Canadian adults and Russian young adults, where oral health-related quality of life was significantly worse in rural areas compared to those in urban ones.<sup>15,27</sup> This could be due to the fact that the sample covered only a segment of the rural area, due to the distribution of dentists by districts. As dentists are less available in rural areas, it would be expected that people there have less access to dental care services, resulting in a lower quality of care in oral health-related quality of life in Paraguayan adults.

No significant difference was found according to



gender in this study, unlike a study carried out in a Swedish population, where the oral health-related quality of life was poorer in women,<sup>28</sup> similarly in young adults Russians,<sup>27</sup> Spaniards,<sup>29</sup> and Australians, although in the latter, it was not statistically significant.<sup>12</sup>

However, these results coincide with the oral health-related quality of life studies conducted in Paraguayan adolescents and older adults, as no difference according to gender was found in these populations.<sup>7,8</sup> Among the limitations of this study, we find that the sample only covers two regions, and that it does not include indigenous populations, which is why it would not be sensible to extrapolate the results to the entire population.

However, the sample could be considered representative in terms of social strata, since it includes a very socioeconomically disadvantaged sector such as the Ricardo Brugada neighborhood known as “La Chacarita”. The patients who came to the School of Dentistry of Universidad Nacional de Asunción are from different parts of the country, and come due to lower costs and for its good reputation.

The same applies to the patients coming from the Pirayú health center, who live in the interior of the country, where there are very few private dental clinics. The absence of data on other determinants of the oral health status does not allow to determine the possible causes of the problem, which should be addressed from a public health perspective. The OHIP-14Py application takes five minutes and the data obtained are of utmost importance for the professional to establish a good relationship with the patient. It can be used to measure various clinical aspects in the patients, both for descriptive and longitudinal studies.

The methodology used in this study could be replicated in other regions of the country through the Family Health Units, also managed by the Paraguayan Ministry of Public Health and Social Welfare, in order to determine the oral health status and impact on quality of life, since these data with respect to adults are still unreported.

## CONCLUSION.

Primary and secondary preventive measures should be promoted since the oral health status can negatively influence people’s quality of life and may even cause total inability to carry out daily activities.

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