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Instruments To Measure Quality Of Life Related To Oral Health In Patients With Periodontitis – A Narrative Review

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Abstract: *The periodontitis is an inflammatory disease generated by bacterial components of dental plaque that results in clinical attachment loss and alveolar bone loss. In its initial stage it can be free of symptoms but as it progresses, signs and symptoms can affect how the patient feels and impact the quality of life related to oral health. The objective of this literature review was to identify instruments to measure quality of life related to oral health in patients with periodontitis. A narrative literature review was carried out with the search for the crossing of words "quality of life", "periodontitis", "quality of life related to oral health", "assessment instruments", in Spanish and English in the databases PubMed, Google Scholar and Scielo including original articles, narrative and systematic reviews of the literature. Several quality of life assessment instruments related to oral health were identified, Oral Health Impact Profile-14 (OHIP-14) which is the universally used, followed by Oral Health and Quality of Life (OHQoL-UK), Impacts on Daily Performance Instrument (OIDP): Specific Condition Oral Health on Daily Performance (CS-OIDP) and General Oral Health Assessment Index (GOHAI). This review concludes that Oral Health Impact Profile-14 (OHIP-14) is the most used instrument, however, exist 2 validated instruments that are focused on the clinical conditions in patient with periodontitis: the Oral Health Impact Profile Applied to Periodontal Disease (OHIP-14-PD) and the Oral Health Impact Profile for Chronic Periodontitis (OHIP-CP).*
Key Word*: quality of life, periodontitis, oral health.*

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I. Introduction

Periodontitis is an immunoinflammatory disease characterized by loss of clinical attachment and alveolar bone. The OMS reports that it affects between 10% and 15% of adults, which is almost 10% of the world population [1,2]. The periodontitis is related to aspects of social inequalities, showing that impacts the quality of life in a greater proportion to groups with social and economic disadvantages and the total ecosystem of the individual, their family environment, some aspects such as work, interpersonal relationships and self-esteem [3].

Oral health is completely related to the quality of life and general health of people, due to the effect it has on oral functions and social interactions. The traditional methods used to measure oral health are based on clinical indicators, but these indicators do not consider the functional and psychosocial aspects of oral health [4].

Regarding the quality of life in relation to oral health, the OMS defined it as the perception that individuals have in terms of tasting with their teeth, soft and hard tissues of the oral cavity, during the development of their daily activities, this taking into account the current and previous expectations, the implications of being careful and the beliefs according to the value system within the sociocultural context in which the individual developed.

It has been reported that diseases such as periodontitis can impact the quality of life, because the quality of life related to oral health "captures" the functional, social and pathological impacts of oral disease, and likewise, makes it more difficult to a lesser degree, functions such as eating and/or chewing, communication and aspects such as the patient's self-esteem [5,6].

The objective of this literature review was to identify instruments that can be use in patients with periodontitis to assess the quality of life related to oral health.

II. Quality of Life

The term quality of life was used for the first time, in the year 1920, by Arthur Cecil Pigou, a British economist, after the Second World War, the quality of life covered multiple areas such as sociology, politics,

health, among others and in health sciences it was related to individuals suffering from a neoplastic disease, and this was aimed at the perception of the patient [7].

The OMS (1966) defined the concept of quality of life as "the perception of the individual about his position in life within the cultural context and value system in which he lives, and with respect to his objectives, expectations, norms and interests" [8].

There are several factors that intervene in the quality of life such as poverty, the low possibility of having a job, no or little access to health, public services and little education obtained [9,10].

Gill and Feinstein, affirm that the quality of life goes hand in hand with the respective events which people feel identified and for which they feel valued, in turn the physical, psychological and social factors; these previously indicated forms are influenced by a person's experiences, beliefs, perceptions and expectations and this can be defined as "perceptions of health" [11].

Each dimension of quality of life is subdivided into objective and subjective, therefore, it is said that 2 people who have the same state of health can have a very different quality of life. So, the quality of life is based on the feeling of satisfaction that can be perceived by each one of the subjects [12].

III. Quality of Life Related to Oral Health

The quality of life is related to oral health, since the oral cavity fulfills functions such as "facial expression, language, chewing, swallowing, salivation, the sense of taste", and it is also usually a good indicator of the health of the individual, his individual and social well-being [9,10].

The quality of life related to oral health is a factor that influences several areas such as emotional, interpersonal and biological, pathologies of the oral cavity also create a vacuum in self-esteem [13].

Locker and Allen examined the most widely used instrument to measure oral health related to quality of life. Knowing why and how oral health affects people's quality of life is helpful in several ways. The instrument can indicate the motivation that people must perform their personal oral hygiene, what type and pattern they have for the use of their dental services, as well as satisfaction after the treatments received [14].

IV. Relationship of Quality of Life with Periodontitis

Due to the great relationship between oral health and quality of life, this can be affected by oral manifestations, the same ones that can generate different alterations in the daily life of people, the deterioration of their masticatory activity, what makes the diet change, the consumption of certain proteins being limited, due to the difficulty in eating them. In the same way, the physical appearance, their personal relationships with friends, or even their work environment can also be affected, since when some dental organs are missing, the person's self-esteem can be affected, and not just the aesthetic but also functional [15].

Periodontal diseases are one of the diseases that have a high daily impact on quality of life since they significantly affect the patient's oral health [16].

Periodontitis is an inflammatory condition, that it is generated by bacterial components found in the dental plaque, and that its presence generates damage, loss of the periodontal ligament and alveolar bone, and we see this clinically reflected with the appearance of periodontal pockets and attachment loss.

Periodontitis in its initial stage is free of symptoms, and as it progresses, its own signs and symptoms can influence how the patient feels and the quality of life they have, not only talking about their physical appearance, but also affects their psychological perception such as their ability to socialize, interact and even hinder the activities they carry out daily [15].

As periodontal disease progresses, it brings pain and discomfort as consequences, and in turn, these complications affect very important functions such as eating, sleeping, speaking, and it can also cause embarrassment in your social relationships, and it can also cause problems economical due to the high cost of the treatments [3], with great impact on the quality of life [15].

V. Instruments to Measure Quality of Life Related to Oral Health

We can find several instruments that measure the quality of life related to oral health, one of them is the Oral Health Related Quality Of Life (OHRQol) where oral signals are assessed in habitual routines, such as oral hygiene, speaking , eating, smiling, as well as emotional security and social interaction, another instrument is Child Oral Impacts on Daily Performances (Child-OIDP), in which 4 categories can be specifically highlighted: functional, psychological, social and if there is discomfort or pain) [9].

The Oral Health Impact Profile-49 (OHIP-49) was created as an indicator of the deficiencies that are perceived by patients, to develop behaviors that are related to oral health through the evaluation of dysfunction and self-perception of the impact produced by oral pathologies in the activities that older adults present every day [17,18].

This evaluation contains 49 items, which are divided into 7 categories, which are: psychological discomfort, physical pain, functional limitations, physical, psychological and social disability, and disability when carrying out daily activities [19].

VI. Oral Health Impact Profile 14 (OHIP-14)

It is a questionnaire of 14 items, represent the simplified version of Oral Health Impact Profile-49 (OHIP-49), it was modified by Slade in 1997 that through completing questionnaires, reliability tests, and data analysis, the simplify version was accepted [19,20].

When completing the questionnaire, the patient must be told that the questions are based on how they have felt in the last 12 months [21]. To obtain the rating, the result of each response will be added, and this will represent the impact of oral disorders on the patient's quality of life. It is a Likert questionnaire with the following answer options: Never=0, Almost Never=1, Sometimes=2, Frequently=3, Always=4 [19].

The Oral Health Impact Profile-14 (OHIP-14) has made it possible to verify the effectiveness of some dental treatments, it is an effective, valid, and reliable instrument [22]. The questionnaire can be used in patients with implants/implant-supported prostheses, since there may be inflammatory conditions around the implants, which have an influence on the quality of life, the perceptions and expectations of patients that can guide specialist for providing the best service [4].

VII. Oral Health Impact Profile and Periodontitis

In this narrative review, it is noted that each of the studies has an association between the periodontal state according to the degree of severity and the negative impact on quality of life related to oral health.

Moral de la Rubia and Rodríguez Franco design and validated the instrument Oral Health Impact Profile Applied to Periodontal Disease **(**OHIP-PD), that was adapted from Slade's Oral Health Impact Profile-14 (OHIP-14) but in this case it is oriented to questions about periodontal disease. It consists of 14 items distributed in 7 dimensions, which are: functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability and handicap. It is a Likert scale where 0=never, 1= almost never, 2= occasionally, 3= frequently and 4= very frequently, and the values given are added to obtain the final score [23].

He et al. [24] developed this instrument, which was the first to assess the deterioration of the OHRQoL condition in patients with chronic periodontitis, with the intention of improving the quality of future clinical studies. They did use qualitative content analysis and quantitative classical test theory with 110 patients, 18 items were selected in the Oral Health Impact Profile for Chronic Periodontitis (OHIP-CP), they demonstrated that this questionnaire has a structure of 3 domains which are: pain and functional limitation, psychological discomfort and psychological disability, and social handicap.

Makino et al. [22] applied an instrument to measure the Oral Health Related Quality of Life (OHRQL), with a cohort design. His study included 75 patients who were diagnosed with periodontitis at the time of evaluation, 50 of them received periodontal flap therapy, and the other 26 received non-surgical periodontal therapy. No difference was found in quality of life related to oral health between each of the groups, except for the presence of pain, which was greater in patients who underwent surgery. 4 weeks later, they showed improvement in their chewing function and pain, and 12 weeks after receiving the treatment, the patients showed a greater amount of improvement.

Meusel et al. [25] studied 100 participants between 30-58 years of age, evaluated with the Oral Health Impact Profile-14 (OHIP-14) instrument. A greater impact was found on the quality of life of the patients who were diagnosed with severe periodontitis, since it had affected the ability to speak of the patients and functional limitations, they reported having interrupted meals, pain, psychological disability, interpreted as feeling ashamed for their teeth.

Jansson et al. [26] used a cross-sectional design study and the Oral Health Impact Profile-14 (OHIP-14), in 443 patients aged 20-89 years, evaluated patients who had periodontal pockets ≥4 mm diagnosed with periodontitis. Patients reported greater negative effects of periodontal disease on quality of life due to functional limitation, psychological distress, physical, psychological, and social disability, and handicap.

Bernabé and Marcenes [27] with 3122 used the Oral Health Impact Profile-14 (OHIP-14) instrument, observed that the quality of life related to oral health is negatively affected by increasing the number of teeth with pockets ≥4 mm. He analyzed that adults who had 10 teeth with pockets ≥4 mm had a greater negative impact on his OHIP-14 evaluation instrument, and concluded that the more severe the periodontitis, the worse the quality of life of the patients.

Habashneh et al. [28] evaluated the quality of life related to oral health, using the Oral Health Impact Profile-14 (OHIP.14), with a sample of 400 patients between 18-60 years of age, found among the participants that 41.8% had gingivitis, 19.8% mild periodontitis, 23.3% moderate periodontitis and 15.3% severe periodontitis. Comparing the results of each of them, discovered that patients with severe periodontitis showed a greater affectation in their levels of quality of life with respect to the dimension of physical pain and physical disability.

No significant association was found between the OHIP values and functional limitation. In his study, the authors concluded that patients with severe periodontitis had a worse perception regarding their quality of life related to oral health, in each of the categories that were evaluated in the instrument.

Wong et al. [29] with a sample of 65 patients, found that the quality of life related to oral health improved in patients after periodontal treatment in the categories of physical pain, psychological discomfort, psychological disability.

Brauchle et al. [30] used the Oral Health Impact Profile-14 (OHIP-14) instrument in 93 patients with a range of 27-74 years. In the initial assessment, patients with periodontitis presented worse quality of life related to oral health when compared with the control group, there was improvement over time, which shows that non-surgical periodontal therapy has a positive effect on the perception of quality of life in those patients who presented periodontal pockets >7mm, psychological discomfort and psychological disability decreased after receiving the treatment. It was found that the presence of tobacco and female gender influences the Oral Health Impact Profile-14 (OHIP-14) scores.

Nagarajan and Chandra [31] used the Oral Health and Quality of Life (OHQoL-UK) in 183 patients between 18-55 years of age, evaluated the quality of life related to oral health, using 2 types of therapy, flap surgery and on-surgical therapy. A more negative impact of periodontitis was found in patients who had greater severity of periodontal disease. After treatment, scores on the instrument improved in categories related to smiling, bad breath, finances, social life, and care strategies.

In a prospective study, Saito et al. [32] evaluated 108 patients between 20-75 years of age with the Oral Health Related Quality of Life (OHRQL) instrument, of whom 58 had periodontitis, 76% of the patients reported improvement in their quality of life in relation to oral health after treatment, mostly in the category of pain and masticatory function.

In a randomized clinical study conducted by Tsakos et al. [33] studied 45 patients with the Oral Impacts on Daily Performance (OIDP) and Specific Condition Oral Impacts on Daily Performance (CS-OIDP) instruments, of whom 17 received supragingival periodontal therapy and 28 subgingival. Most of the patients improved their levels of quality of life related to oral health a month after having completed the treatment, although no significant differences were found with the Specific Condition Oral Impacts on Daily Performance instrument (CS-OIDP).

Santuchi et al. [34] using the Oral Health and Quality of Life (OHQoL-UK) instruments and the Oral Impacts on Daily Performance (OIDP), conducted a clinical study in 78 patients comparing full-mouth periodontal treatment with conventional non-surgical periodontal treatment. When using the Oral Impacts on Daily Performance (OIDP) instrument, there was no significant difference between the treatments and regarding the Oral Health and Quality of Life (OHQoL-UK), it showed that the full mouth treatment after 30 days improved and it was more evident at 180 days.

By contrasting 2 of the instruments, which in this case were the Oral Health Impact Profile-14 (OHIP-14) and the General Oral Health Assessment Index (GOHAI), Ohrn and Jönson [35] compared the measurements before and after treatment in 42 patients. No significant difference was found between the two instruments.

VIII. Conclusion

There was a relationship between the periodontal state, according to its degrees of severity and its impact on the quality of life related to oral health, these coincide with those found by Al-Harthi et al. [36] in his literature review, where showed the negative impact of periodontal disease. Similar to the systematic review by Shanbhag et al. [37].

This review concludes that although we have several instruments to measure quality of life in relation to oral health under different oral conditions, the Oral Health Impact Profile-14 (OHIP-14) was the most used to measures the impact of the periodontitis. The instruments identified in this narrative review that measure specifically signs and symptoms of periodontitis were Oral Health Impact Profile Applied to Periodontal Disease **(**OHIP-14-PD) and Oral Health Impact Profile for Chronic Periodontitis **(**OHIP-CP), both focused on the clinical conditions presented by a patient with periodontitis. Measure the impact of periodontitis in quality of life and to expand the use of instruments at the time of dental consultation represent a challenge.

References

[1]. Ministerio De Salud Y Protección Social. Estudio Nacional De Salud Bucal. 4th Ed. Colombia: Minsalud; 2013.
[2]. Mapengo-Domingos MA, Mepatia AI, Xavier CN, Et Al. Dental Caries And Periodontal Diseases In Mozambique. Res Soc Dev 2022; 11: 2-9.
[3]. Pardo F, Hernández L. Enfermedad Periodontal: Enfoques Epidemiológicos Para Su Análisis Como Problema De Salud Pública. Rev Salud Pública 2018; 20: 258-264.
[4]. Alzarea BK. Assessment And Evaluation Of Quality Of Life (Ohrqol) Of Patients With Dental Implants Using The Oral Health Impact Profile (Ohip-14) - A Clinical Study. J Clin Diagn Res 2016; 10: ZC57-60.
[5]. Yaacob M, Han TM, Wahab SM, Et Al. Chronic Periodontitis Patients: Their Knowledge And Its Correlation With Oral Health Related Quality Of Life. Mater Today: Proc 2019; 16: 2302-2308.

[6]. Rivera E. La Importancia Del Ohip (Oral Health Impact Profile) En La Odontología. Odontol Sanmarquina 2020; 23: 37-39.
[7]. Schwartzmann L. Health-Related Quality Of Life: Conceptual Aspects. Cienc Enferm 2003; 9: 9-21.
[8]. Velarde-Jurado E, Avila-Figueroa C. Evaluación De La Calidad De Vida. Salud Pública Méx 2002; 44: 349-361.
[9]. Cerón-Bastidas XA. Relación De Calidad De Vida Y Salud Oral En La Población Adolescente. CES Odontol 2018; 31: 38-46.
[10]. Sagtani RA, Thapa S, Sagtani A. Smoking, General And Oral Health Related Quality Of Life - A Comparative Study From Nepal. Health Qual Life Outcomes 2020; 18: 1-7.
[11]. Robles-Espinoza AI, Rubio-Jurado B, De La Rosa-Galván EV, Et Al. Generalidades Y Conceptos De Calidad De Vida En Relación Con Los Cuidados De Salud. Residente 2016; 11: 120-125.
[12]. Urzúaa, Caqueo-Urizar A. Calidad De Vida: Una Revisión Teórica Del Concepto. Ter Psicol 2012; 30: 61-71.
[13]. Yadav T, Chopra P, Kapoor S. Association Between Chronic Periodontitis And Oral Health Related Quality Of Life In Indian Adults. J Int Oral Health 2019; 11: 280-86.
[14]. Locker D, Allen F. What Do Measures Of Oral Health-Related Quality Of Life Measure? Community Dent Oral Epidemiol 2007; 35: 401-411.
[15]. Rivadeneyra-Burgos C, Soto-Chávez AA, Ruiz-Gutiérrez A. Determinación De La Calidad De Vida En Pacientes Diabéticos Tipo 2 Con Periodontitis Crónica. Rev Mex Periodontol 2018; 9: 40-44.
[16]. Zanatta FB, Ardenghi TM, Antoniazzi RP, Et Al. Association Between Gingival Bleeding And Gingival Enlargement And Oral Health-Related Quality Of Life (Ohrqol) Of Subjects Under Fixed Orthodontic Treatment: A Cross-Sectional Study. BMC Oral Health 2012; 12: 1-9.
[17]. Slade G, Spencer A. Development And Evaluation Of The Oral Health Impact Profile. Community Dental Health 1994; 11: 3-11.
[18]. Aubert J, Sanchéz S, Castro R, Et Al. Calidad De Vida Relacionada Con Salud Oral En Mayores De 14 Años En La Comunidad San Juan Bautista, Isla Robinson Crusoe, Chile. Int J Odontostomat 2014; 8: 141-145.
[19]. Slade GD. Derivation And Validation Of A Short-Form Oral Health Impact Profile. Community Dent Oral Epidemiol 1997; 25: 284-290.
[20]. Diaz-Reissner CV, Casas-García I, Roldán-Merino J. Calidad De Vida Relacionada Con Salud Oral: Impacto De Diversas Situaciones Clínicas Odontológicas Y Factores Sociodemográficos. -Revisión De La Literatura. Int J Odontostomat 2017; 11: 31-39.
[21]. Carvajal P. Enfermedades Periodontales Como Un Problema De Salud Pública: El Desafío Del Nivel Primario De Atención En Salud. Rev Clin Periodoncia Implantol Rehabil Oral 2016; 9: 177-183
[22]. Makino-Oi A, Ishii Y, Hoshino T, Et Al. Effect Of Periodontal Surgery On Oral Health-Related Quality Of Life In Patients Who Have Completed Initial Periodontal Therapy. J Periodontal Res 2015; 51: 212-220.
[23]. Moral-De La Rubia J, Rodríguez-Franco NI. Validation Of The Oral Health Impact Profile Applied To Patients With Periodontal Disease. Rev Fac Odontol Univ Antioq 2017; 29: 148-172.
[24]. He S, Wang J, Wei S, Et Al. Development And Validation Of A Condition-Specific Measure For Chronic Periodontitis: Oral Health Impact Profile For Chronic Periodontitis. J Clin Periodontol 2017; 44: 591-600.
[25]. Meusel DR, Ramacciato JC, Motta RH, Et Al. Impact Of The Severity Of Chronic Periodontal Disease On Quality Of Life. J Oral Sci 2015; 57: 87-94.
[26]. Jansson H, Wahlin Å, Johansson V, Et Al. Impact Of Periodontal Disease Experience On Oral Health-Related Quality Of Life. J Periodontol 2014; 85: 438-445.
[27]. Bernabé E, Marcenes W. Periodontal Disease And Quality Of Life In British Adults. J Clin Periodontol 2010; 37: 968-972.
[28]. Al Habashneh R, Khader YS, Salameh S. Use Of The Arabic Version Of Oral Health Impact Profile-14 To Evaluate The Impact Of Periodontal Disease On Oral Health-Related Quality Of Life Among Jordanian Adults. J Oral Sci 2012; 54: 113-20.
[29]. Wong RM, Ng SK, Corbet EF, Et Al. Non-Surgical Periodontal Therapy Improves Oral Health-Related Quality Of Life. J Clin Periodontol 2012; 39: 53-61. Quality Of Life. J Clin Periodontol 2012; 39: 53-61.
[30]. Brauchle F, Noack M, Reich E. Impact Of Periodontal Disease And Periodontal Therapy On Oral Health-Related Quality Of Life. Int Dent J 2013; 63: 306-311.
[31]. Nagarajan S, Chandra RV. Perception Of Oral Health Related Quality Of Life (Ohqol-Uk) Among Periodontal Risk Patients Before And After Periodontal Therapy. Community Dent Health 2012; 29: 90-94.
[32]. Saito A, Hosaka Y, Kikuchi M, Et Al. Effect Of Initial Periodontal Therapy On Oral Health-Related Quality Of Life In Patients With Periodontitis In Japan. J Periodontol 2010; 81:1001-1009.
[33]. Tsakos G, Bernabé E, D'Aiuto F, Et Al. Assessing The Minimally Important Difference In The Oral Impact On Daily Performances Index In Patients Treated For Periodontitis. J Clin Periodontol 2010; 37: 903-909.
[34]. Santuchi CC, Cortelli JR, Cortelli SC, Et Al. Scaling And Root Planning Per Quadrant Versus One-Stage Full-Mouth Disinfection: Assessment Of The Impact Of Chronic Periodontitis Treatment On Quality Of Life - A Clinical Randomized, Controlled Trial. J Periodontol 2016; 87: 114-123.
[35]. Ohrn K, Jönsson B. A Comparison Of Two Questionnaires Measuring Oral Health-Related Quality Of Life Before And After Dental Hygiene Treatment In Patients With Periodontal Disease. Int J Dent Hyg 2012; 10: 9-14.
[36]. Al-Harthi LS, Cullinan MP, Leichter JW, Et Al. The Impact Of Periodontitis On Oral Health-Related Quality Of Life: A Review Of The Evidence From Observational Studies. Aust Dent J 2013; 58: 274-277.
[37]. Shanbhag S, Dahiya M, Croucher R. The Impact Of Periodontal Therapy On Oral Health Related Quality Of Life In Adults: A Systematic Review. J Clin Periodontol 2012; 39: 725-735.