

# Impact of Oral Health on Quality of Life and its Potential Long-Term Effects.

Romesa Khero<sup>1</sup>, Shagufta Channa<sup>2</sup>, Rimsha Lalain<sup>3</sup>, Jagdesh Kumar<sup>4</sup>, Hira<sup>5</sup>, Maham Shah<sup>6,\*</sup>.

## ABSTRACT:

In light of its relative uniqueness, oral health-related quality of life (OHRQoL) has gained importance in recent years. This has impacted research in the fields of dentistry and medical practice. OHRQoL encompasses an individual's subjective evaluation of their oral health, self-esteem, functional emotional well-being, and expectations and satisfaction with care. It is highly valuable in clinical and research settings. The factors that support well-being and quality of life are closely linked to OHRQoL. According to the World Health Organization (WHO) in 2003, it is often a crucial component of overall oral healthcare. This article presents a theoretical model of oral health and explains the role of OHRQoL. The significance of OHRQoL for both patients and healthcare providers is being recognized by community dental schools. Consequently, health strategies and oral health alternatives are also being given attention.

## Introduction:

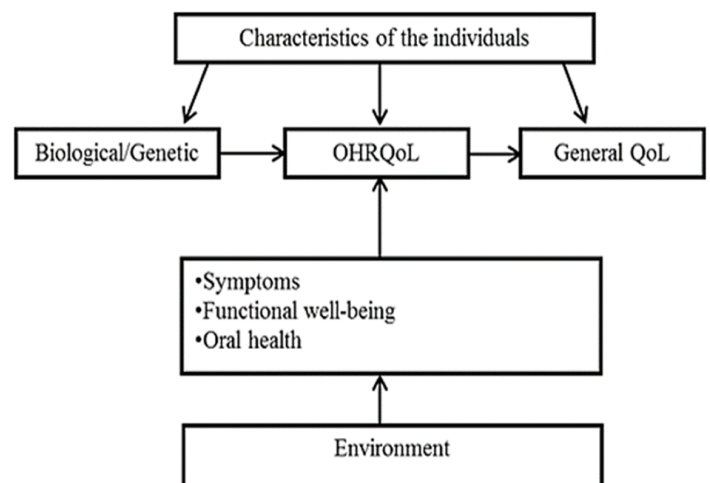
The oral health-related quality of life, or OHRQoL, is a relatively new concept in dentistry that has recently gained popularity in dental research. Because of its significance to overall health and well-being, OHRQoL is recognized by the WHO as an essential component of the global oral health program (WHO). The ideas of Worldwide Wellbeing programming, which utilizes showcasing and publicizing systems to advance sound living and prosperity, are represented by pictures of good oral wellbeing. Moreover, "appealing" grins and "white" teeth work on tasteful pictures and kill dental uneasiness. OHRQoL currently refers to a number of different actions. Coming up next are the paper's particular objectives: The initial step is to characterize OHRQoL (the What); the second is to talk about its importance for dental practice and examination; the third is to make sense of how OHRQoL is utilized in research and analyze patterns in research over the long run; and the fourth is to investigate the ramifications of OHRQoL research for wellbeing strategy.<sup>1-</sup>

## What is OHRQoL?

Beginning in 1948, Beginning around 1948, when the World Wellbeing Association (WHO) characterized wellbeing as "a total condition of physical, mental, and social prosperity and in addition to the shortfall of sickness," wellbeing administration specialists have zeroed in on wellbeing as a multidisciplinary idea. This thought of the condition of wellbeing is affected by the biopsychosocial model of wellbeing, which is established on natural capability and side effects notwithstanding physical and neurological sta-

tus.<sup>9-11</sup> The definition of quality of life is "people's perception of their position within the cultural and value systems in which they live, as well as with regard to their objectives, expectations, standards, or concerns." It incorporates basically every feature of dental and psychological well-being care.<sup>13-20</sup> It is generally accepted that this measure (WHOQOL, 1995, p. 1405) is helpful for assessing patients. Numerous attempts have been made to develop methods for evaluating OHRQoL ever since proposed the use of sociodental factors.<sup>12,37-40</sup> The effect of oral medical conditions on public activity – including self-esteem, social cooperation, scholarly execution, profession achievement, and different regions – was likewise a subject of conversation. Gift and Atchison were the first to propose theories regarding the connection between oral health and health-related quality of life (HRQoL). In addition, an effort was made to comprehend the relationship between person-centered, self-reported health experiences, conventional clinical parameters like diagnosis, and data from clinical examinations. Self-esteem, oral health satisfaction, and levels of comfort during meals, sleep, and social interactions are all taken into account in subjective assessments of health-related quality of life (OHRQoL). This is the result of communications among social and biological variables, dental medical problems, and human prosperity all in all,<sup>3,21-28</sup>

Figure 1. Theoretical model for OHRQoL. \*Applicable for children only



1. Bhitai Dental & Medical College. Mirpurkhas
2. Lecturer Prosthodontics; Muhammad Medical College. Mirpurkhas
3. MSc Trainee Prosthodontics. LUMHS. Jamshoro.
4. Post Graduate Resident, Prosthodontic. LUMHS. Jamshoro.
5. MSc Trainee, Orthodontics. LUMHS. Jamshoro.
6. Lecturer Community Dentistry. LUMHS. Jamshoro.

\*=corresponding author :

Email: [maham.shah@lumhs.edu.pk](mailto:maham.shah@lumhs.edu.pk)

Here, we present our hypothetical model of OHRQoL, which considers organic, social, mental, and social variables (Fig. 1). The model was created in view of Wilson work, which coordinated thoughts from speculations in brain research and sociology with results from epidemiological examinations.<sup>5,62-65</sup> A person's clinical features, such as the kind and severity of a lesion, and their functional status, such as their speech, as well as their psychological state and their facial and oral appearance, are linked in this paradigm. The strategy recognizes that oral health attitudes and quality of life are influenced by a variety of factors, including education, family dynamics, societal influences, and access to care. The methodology perceives those mentalities toward oral wellbeing and the related personal satisfaction are impacted by different elements, including admittance to mind, relational peculiarities, schooling, and social impacts. Theoretically, OHRQoL is influenced by a wide range of experiences and symptoms and reflects the individual's subjective opinion. Both positive and negative view of oral wellbeing and wellbeing results are presently considered by wellbeing related personal satisfaction (HRQoL) and in general wellbeing related personal satisfaction (OHRQoL), as wellbeing strategy has changed to put an accentuation on sickness counteraction and wellbeing advancement. Hence, assessments of dental wellbeing can show both pessimistic results and valuable consequences for an individual's character and in general prosperity. You can counsel an oral wellbeing proficient for any elective or preventive dental systems. An individual's personal satisfaction (QoL), particularly as far as their capacity to manage disease and chronic frailty, has been demonstrated to be corresponded with mental characteristics like positive thinking and versatility by wellbeing clinicians. Social network and adapting are connected to further developed immunosuppression, wellbeing results as well as mortality concurring, which significantly affects the organization of clinical consideration. Notwithstanding unambiguous instances of things connecting with each aspect, the average components of OHRQoL instruments are demonstrated in fig 2. Social network and adapting are connected to further developed immunosuppression, wellbeing results as well as mortality concurring to Lopez et al., 2003, which significantly affects the organization of clinical consideration. Notwithstanding unambiguous instances of things connecting with each aspect, the average compo-



nents of OHRQoL instruments are demonstrated in fig 2 lists the commonplace elements of OHRQoL instruments notwithstanding unambiguous instances of the things related with each aspect. The image shows customary markers like oral wellbeing side effects, yet additionally parts like social and close to home prosperity that incorporate positive parts of wellbeing for instance joy or certainty. In particular, found that 21 "positive influence of oral health and the appearance of the face and teeth on overall health and well-being among patients and individuals who do not seek treatment."<sup>38-42,62</sup> The Youngster Oral Wellbeing Effect Profile (COHIP), one of the latest OHRQoL instruments, means to recognize the association between treatment results (like fulfilment) and treatment influence. As indicated positive parts of wellbeing have been remembered for evaluations of grown-ups, kids, and more established individuals. OHRQoL looks at both good and bad outcomes throughout a person's life.,<sup>1, 37, 45-49</sup>

### Why is OHRQoL important?

Both the hypothesis and the hone rely heavily on OHRQoL. Agreeing to the Expert General, OHRQoL might be a need, noticed that "QoL issues are by and by at the bleeding edge of open prosperity approach." A report from the Specialist Common that was presented at a global conference titled "The Confront of Children" highlighted the significant impact that verbal cleanliness may have on the quality of life of children as well as the significance of children's dental health to their overall health and wellbeing. Everybody's life is impacted by their verbal prosperity, and OHRQoL ask about has exhibited significant in looking at a variety of masses, counting mouth disease patients, small kids with youth caries, and youngsters with craniofacial varieties from the standard. An illustration of the various types of OHRQoL thought and methodology can be found in our writing survey, Evaluation of OHRQoL licenses for a move from customary dental and restorative models to appraisal and treatment that middle on a person's physical and social working in organize to choose reasonable treatment targets and results. Patients' emotional acknowledgments of the medical services dynamic handle influence the components of clinical sharpen, prosperity results checking, and ask about. The state of prosperity thus increases the significance of HRQoL as a charming prosperity result variable. Finally, OHRQoL is indispensable since of its effect on care get to and verbal prosperity aberrations. Sadly, aberrations in verbal prosperity between racial/ethnic and monetary packs are a significant social issue. Access to care is one factor that contributes to health disparities. Treatment availability is compelled in well off countries because of unnecessary costs and, on occasion, transportation inconveniences.<sup>51,52,53,54</sup> How is OHRQoL Used in Exploration? OHRQoL has gained a distinct quality in research into dentistry as a result of the shift in worldview toward a biopsychosocial, patient-centred approach to dental care. This region tends to the taking after three core interests: (1)(1) Factors to consider while dissecting OHRQoL; (2) Using OHRQoL in Study Ask about; and (3) Using OHRQoL as an outcome metric. Examinations for Assessing OHRQoL is viewed as in contemplates in a variety of ways.<sup>55</sup> It is essential to determine the precise purpose of the OHRQoL assessment at the outset because thinking about applica-

tions can change (for example, measuring the impact of verbal health by comparing community treatment utilization, comparing effects within and across age groups). The OHRQoL assessment instrument should be able to distinguish between and within applications based on the severity of the condition (for example, disease status), in addition to possibly distinguishing between symptomatic or treatment-seeking groups. It could be ideal to use sickness explicit measures rather than boring ones. They were initially developed to identify symptoms and outcomes specific to a particular condition (such as cancer), so they may have a greater affectability than common disobedience in the distance. According to Lee et al.<sup>35</sup> the disease-specific Verbal Wellbeing Affect Profile (OHIP) is more strongly associated with verbal wellbeing issues than the common QoL degree, the Brief Frame Wellbeing Study (SF-36). An OHRQoL examination might address practically verbal torture, while a nonexclusive scale might ask around genuine inconvenience or shortcoming. The primary advantage of disease-specific measures over nonexclusive ones is that bland rebellious frequently have greater "floor impacts" (i.e., no impact) because many of the indications tapped may not be common or noteworthy among tests performed on individuals seeking dental care.<sup>56-58</sup>

#### OHRQoL as an outcome measure:

Assessments of OHRQoL are in this manner sensible for use with a wide run of verbal prosperity diseases, yet they may not be delicate adequate for patients searching for therapy for illnesses, for example, sickle cell disease, which has no verbal prosperity secondary effects. OHRQoL in Study Exploration: In prosperity organizations ask about, OHRQoL is used to consider verbal prosperity examples and populace based needs evaluations. Epidemiological outlines are used in ask going to investigate OHRQoL designs (like worn surfaces), perceive normal and individual parts (like compensation, guidance, etc) that influence OHRQoL, and assist with prosperity orchestrating and needs assessment for populace based approach exercises, to title numerous. Consenting to research, a couple of peoples are more probable than others to have low OHRQoL. Kids from big league salary homes, for outline, had a preferred OHRQoL over youngsters from low-pay families because of a monetary difference. Surprisingly, discovered that members' edentulous thoughts did not value these connections. Accordingly, there's no reasonable alliance between sociodemographic factors and OHRQoL. non-Latino White workers and first-generation Latino workers had significantly different OHRQoL. Regardless, agreeing to the Expert General's Report, agreeing to estimations from the NHANES and Public Prosperity Study for Kids, financially obstructed bundles and people of racial and ethnic minorities inside the Combined States are bound to contribution verbal prosperity ambiguities and less fortunate OHRQoL. OHRQoL as a Result Measure: OHRQoL assessments have recently been used in observational clinical trials and research to assess the suitability of treatment and advance persistent care.<sup>59-61</sup>

#### Implications of OHRQoL Research and Health Policy:

The drawn out OHRQoL consider focuses to assess changes in scores among pre-and post-treatment stages. Personal satisfaction in Youngsters, for which I'm as of now filling in as second maker, could be a NIDCR-financed

action. For instance, school-age children with cleft issues will participate in this upcoming investigation to examine the effects of surgical interventions on their OHRQoL and HRQoL. When contrasted with typical false teeth, mandibular install overdentures gained ground OHRQoL for edentulous patients inside the present moment.<sup>10-15</sup> Children in Brazil who received orthodontic treatment appeared to have better OHRQoL than their peers who did not receive treatment. Finally, a San Francisco study found that welfare recipients' OHRQoL and business outcomes improved with dental care. Ideas of OHRQoL Ask about and Prosperity Strategy: Inconsistent admittance to mind adds to the expansive issue of moo verbal medical care use and desperate verbal prosperity. makes it clear. With the present helpful and monetary worries, as well as the political discussion about over medical services money management cuts, get to mind could be a plan issue.<sup>18,48-50</sup> legislators' awareness of oral health issues can be improved by highlighting the connection between poor oral health and life satisfaction. When assessing patient needs, outcomes, and professional practice, sociocultural and psychological factors must be taken into account due to the diversity of individuals to be examined and the expanded availability of treatment options. The US Branch of Wellbeing and Human Administrations' Wellbeing Assets and Administrations Organization (HRSA) has advanced local area wellbeing focuses, which may likewise incorporate dental treatment, for of further developing access.<sup>51-59</sup> It is currently accessible to Finance for these foundations. As per HRSA (2010), in 2009, these facilities treated over 3.4 million dental patients. Evaluation of these services' pre- and post-treatment outcomes may assist in evidence-based decision-making regarding treatment requirements, efficacy, and policy perspectives due to the prevalence of dental caries and its preventative nature.<sup>61-65</sup>

#### Conclusion:

Given the meaning of wellbeing imbalances in open approach, it is obvious that the NIH and NIDCR have focused on supporting examination on oral wellbeing variations. Since 2001, the Centres for Research to Reduce Oral Health Disparities have received funding from the NIDCR. CAN-DO at the College of California and the Middle at Boston College are right now exploring the effect of youth caries (ECC) on the OHRQoL of small kids. As we move from bench to applied science and person-centred methods for measuring treatment requirements and care efficacy, OHRQoL has numerous important applications in dentistry, healthcare, and dental research.

#### References:

1. ADA & Centre for Evidence-based dentistry. <https://www.ada.org/en/resources/research/science-and-research-institute/evidence-based-dental-research>
2. Sisco L, Broder HL. Oral health-related quality of life: what, why, how, and future implications. *J Dent Res.* 2011 Nov;90(11):1264-70. doi: 10.1177/0022034511399918. Epub 2011 Mar 21. PMID: 21422477; PMCID: PMC3318061.
3. Atchison KA, Dolan TA. Development of the Geriatric Oral Health Assessment Index. *J Dent Educ.* 1990 Nov;54(11):680-7. PMID: 2229624. DOI: [10.1002/](https://doi.org/10.1002/)



- [j.0022-0337.1990.54.11.tb02481.x](https://doi.org/10.0022-0337.1990.54.11.tb02481.x) [PubMed: 2229624].
4. Atchison KA, Shetty V, Belin TR, Der-Martirosian C, Leathers R, Black E, Wang J. Using patient self-report data to evaluate orofacial surgical outcomes. *Community Dent Oral Epidemiol.* 2006 Apr;34(2):93-102. DOI: [10.1111/j.1600-0528.2006.00260.x](https://doi.org/10.1111/j.1600-0528.2006.00260.x) PMID: [16515673](https://pubmed.ncbi.nlm.nih.gov/16515673/).
  5. Awad MA, Locker D, Korner-Bitensky N, Feine JS. Measuring the effect of intra-oral implant rehabilitation on health-related quality of life in a randomized controlled clinical trial. *J Dent Res.* 2000 Sep;79(9):1659-63. DOI: [10.1177/00220345000790090401](https://doi.org/10.1177/00220345000790090401) [PubMed: [11023260](https://pubmed.ncbi.nlm.nih.gov/11023260/)].
  6. Barbosa TS, Gavião MB. Oral health-related quality of life in children: part II. Effects of clinical oral health status. A systematic review. *Int J Dent Hyg.* 2008 May;6(2):100-7. DOI: [10.1111/j.1601-5037.2008.00293.x](https://doi.org/10.1111/j.1601-5037.2008.00293.x) [PubMed: [18412721](https://pubmed.ncbi.nlm.nih.gov/18412721/)].
  7. Botello-Harbaum MT, Matthews AG, Collie D, Vena DA, Craig RG, Curro FA, Thompson VP, Broder HL; PEARL Network. Level of oral health impacts among patients participating in PEARL: a dental practice-based research network. *Community Dent Oral Epidemiol.* 2012 Aug;40(4):332-42. doi: [10.1111/j.1600-0528.2012.00676.x](https://doi.org/10.1111/j.1600-0528.2012.00676.x). Epub 2012 Mar 5. PMID: 22390788; PMCID: PMC3380181.
  8. Broder HL. Using psychological assessment and therapeutic strategies to enhance well-being. *Cleft Palate Craniofac J.* 2001 May;38(3):248-54. DOI: [10.1597/1545-1569\\_2001\\_038\\_0248\\_upaats\\_2.0.co\\_2](https://doi.org/10.1597/1545-1569_2001_038_0248_upaats_2.0.co_2) PubMed: [11386433](https://pubmed.ncbi.nlm.nih.gov/11386433/).
  9. Broder, H.L. (2007) Children's oral health-related quality of life. *Community Dentistry and Oral Epidemiology*, 35 (Supplement 1), 5-7 DOI: [10.1111/j.1600-0528.2007.00400.x](https://doi.org/10.1111/j.1600-0528.2007.00400.x) PubMed: [17615045](https://pubmed.ncbi.nlm.nih.gov/17615045/).
  10. Broder, H.L. & Wilson-Genderson, M. (2007) Reliability and convergent and discriminant validity of the Child Oral Health Impact Profile (COHIP Child's version). *Community Dentistry and Oral Epidemiology*, 35 (Supplement 1), 20-31. DOI: [10.1111/j.1600-0528.2007.0002.x](https://doi.org/10.1111/j.1600-0528.2007.0002.x) PubMed: [17615047](https://pubmed.ncbi.nlm.nih.gov/17615047/).
  11. Broder HL, Slade G, Caine R, Reisine S. Perceived impact of oral health conditions among minority adolescents. *J Public Health Dent.* 2000 Summer;60(3):189-92. DOI: [10.1111/j.1752-7325.2000.tb03326.x](https://doi.org/10.1111/j.1752-7325.2000.tb03326.x) PubMed: [11109217](https://pubmed.ncbi.nlm.nih.gov/11109217/).
  12. Cella D, Bullinger M, Scott C, Barofsky I; Clinical Significance Consensus Meeting Group. Group vs individual approaches to understanding the clinical significance of differences or changes in quality of life. *Mayo Clin Proc.* 2002 Apr;77(4):384-92. [DOI: [10.4065/77.4.384](https://doi.org/10.4065/77.4.384)] [PubMed: [11936936](https://pubmed.ncbi.nlm.nih.gov/11936936/)].
  13. Christie MJ, French D, Sowden A, West A. Development of child-centered disease-specific questionnaires for living with asthma. *Psychosom Med.* 1993 Nov-Dec;55(6):541-8. [DOI: [10.1097/00006842-199311000-00010](https://doi.org/10.1097/00006842-199311000-00010)] [PubMed: [8310115](https://pubmed.ncbi.nlm.nih.gov/8310115/)].
  14. Cohen LK, Jago JD. Toward the formulation of socio-dental indicators. *Int J Health Serv.* 1976;6(4):681-98. [DOI: [10.2190/LE7A-UGBW-J3NR-Q992](https://doi.org/10.2190/LE7A-UGBW-J3NR-Q992)] [PubMed: [971976](https://pubmed.ncbi.nlm.nih.gov/971976/)].
  15. Cunnion DT, Spiro A 3rd, Jones JA, Rich SE, Pappageorgiou CP, Tate A, Casamassimo P, Hayes C, Garcia RI. Pediatric oral health-related quality of life improvement after treatment of early childhood caries: a prospective multisite study. *J Dent Child (Chic).* 2010 Jan-Apr;77(1):4-11. PMID: [20359423](https://pubmed.ncbi.nlm.nih.gov/20359423/) ; PMCID: PMC9773631
  16. C. M. de Oliveira & A. Sheiham. Orthodontic treatment and its impact on oral health-related quality of life in Brazilian adolescents, *Journal of Orthodontics*, 2004: 31:1, 20-27, [DOI: [10.1179/146531204225011364](https://doi.org/10.1179/146531204225011364)] [PubMed: [15071148](https://pubmed.ncbi.nlm.nih.gov/15071148/)].
  17. Edelstein BL. The dental caries pandemic and disparities problem. *BMC Oral Health.* 2006 Jun 15;6 Suppl 1 (Suppl 1):S2. [DOI: [10.1186/1472-6831-6-S1-S2](https://doi.org/10.1186/1472-6831-6-S1-S2)] [PubMed: [16934119](https://pubmed.ncbi.nlm.nih.gov/16934119/)].
  18. Eiser C, Morse R. Can parents rate their child's health-related quality of life? Results of a systematic review. *Qual Life Res.* 2001;10(4):347-57. [DOI: [10.1023/a:1012253723272](https://doi.org/10.1023/a:1012253723272)] [PubMed: [11763247](https://pubmed.ncbi.nlm.nih.gov/11763247/)].
  19. Filstrup, S.L., Briskie, D., da Fonseca, M., Lawrence, L., Wandera, A. & Inglehart, M.R. (2003) Early childhood caries and quality of life: Child and parent perspectives. *Pediatric Dentistry*, 25, 431-440 [PubMed: [14649606](https://pubmed.ncbi.nlm.nih.gov/14649606/)].
  20. Furto ES, Cleland JA, Whitman JM, Olson KA. Manual physical therapy interventions and exercise for patients with temporomandibular disorders. *Cranio.* 2006 Oct;24(4):283-91. [DOI: [10.1179/crn.2006.044](https://doi.org/10.1179/crn.2006.044)] [PubMed: [17086858](https://pubmed.ncbi.nlm.nih.gov/17086858/)].
  21. Dos Santos EA, Peinado BRR, Frazão DR, Né YGS, Fagundes NCF, Magno MB, Maia LC, Lima RR, de Souza-Rodrigues RD. Association between temporomandibular disorders and anxiety: A systematic review. *Front Psychiatry.* 2022 Oct 13;13:990430. doi: [10.3389/fpsy.2022.990430](https://doi.org/10.3389/fpsy.2022.990430). PMID: 36311527; PMCID: PMC9606663.
  22. Gift HC, Atchison KA. Oral health, health, and health-related quality of life. *Med Care.* 1995 Nov;33(11 Suppl):NS57-77. [DOI: [10.1097/00005650-199511001-00008](https://doi.org/10.1097/00005650-199511001-00008)] [PubMed: [7475433](https://pubmed.ncbi.nlm.nih.gov/7475433/)].
  23. HRSA: Bureau of Primary Health Care. The Health Centre Program. Retrieved 16 December, 2023. <https://bphc.hrsa.gov/about-health-center-program>
  24. Hyde S, Satariano WA, Weintraub JA. Welfare dental intervention improves employment and quality of life. *J Dent Res.* 2006 Jan;85(1):79-84. [DOI: [10.1177/154405910608500114](https://doi.org/10.1177/154405910608500114)] [PubMed: [16373686](https://pubmed.ncbi.nlm.nih.gov/16373686/)].
  25. Inglehart MR, Bagramian RA. Inglehart MR, Bagramian RA. *Oral Health Related Quality of Life.* Illinois: Quintessence Publishing Co. Inc.; 2002: Chicago, USA, pp. 1-6.

26. Jaeschke R, Singer J, Guyatt GH. Measurement of health status. Ascertaining the minimal clinically important difference. *Control Clin Trials*. 1989 Dec;10(4):407-15. [DOI: [10.1016/0197-2456\(89\)90005-6](https://doi.org/10.1016/0197-2456(89)90005-6)] [PubMed: [2691207](https://pubmed.ncbi.nlm.nih.gov/2691207/)].
27. Jensen PM, Saunders RL, Thierer T, Friedman B. Factors associated with oral health-related quality of life in community-dwelling elderly persons with disabilities. *J Am Geriatr Soc*. 2008 Apr;56(4):711-7 [DOI: [10.1111/j.1532-5415.2008.01631.x](https://doi.org/10.1111/j.1532-5415.2008.01631.x)] [PubMed: [18284537](https://pubmed.ncbi.nlm.nih.gov/18284537/)].
28. John MT, Hujoel P, Miglioretti DL, LeResche L, Koepsell TD, Micheelis W. Dimensions of oral-health-related quality of life. *J Dent Res*. 2004 Dec;83(12):956-60. [DOI: [10.1177/154405910408301213](https://doi.org/10.1177/154405910408301213)] [PubMed: [15557405](https://pubmed.ncbi.nlm.nih.gov/15557405/)].
29. Jung YM, Shin DS. Oral health, nutrition, and oral health-related quality of life among Korean older adults. *J Gerontol Nurs*. 2008 Oct;34(10):28-35. [DOI: [10.3928/00989134-20081001-09](https://doi.org/10.3928/00989134-20081001-09)] [PubMed: [18942537](https://pubmed.ncbi.nlm.nih.gov/18942537/)].
30. Kapp-Simon KA. Psychological interventions for the adolescent with cleft lip and palate. *Cleft Palate Craniofac J*. 1995 Mar;32(2):104-8. [DOI: [10.1597/1545-1569\\_1995\\_032\\_0104\\_piftaw\\_2.3.co\\_2](https://doi.org/10.1597/1545-1569_1995_032_0104_piftaw_2.3.co_2)] [PubMed: [7748869](https://pubmed.ncbi.nlm.nih.gov/7748869/)].
31. Kim HY, Jang MS, Chung CP, Paik DI, Park YD, Patton LL, Ku Y. Chewing function impacts oral health-related quality of life among institutionalized and community-dwelling Korean elders. *Community Dent Oral Epidemiol*. 2009 Oct;37(5):468-76. [DOI: [10.1111/j.1600-0528.2009.00489.x](https://doi.org/10.1111/j.1600-0528.2009.00489.x)] [PubMed: [19681982](https://pubmed.ncbi.nlm.nih.gov/19681982/)]. Epub 2009 Jul 22
32. Klages U, Bruckner A, Zentner A. Dental aesthetics, self-awareness, and oral health-related quality of life in young adults. *Eur J Orthod*. 2004 Oct;26(5):507-14. [DOI: [10.1093/ejo/26.5.507](https://doi.org/10.1093/ejo/26.5.507)] [PubMed: [15536839](https://pubmed.ncbi.nlm.nih.gov/15536839/)].
33. Kleinman, A. (1988). *The illness narratives: Suffering, healing, and the human condition*. Basic Books.
34. Lawrence HP, Thomson WM, Broadbent JM, Poulton R. Oral health-related quality of life in a birth cohort of 32-year olds. *Community Dent Oral Epidemiol*. 2008 Aug;36(4):305-16. [DOI: [10.1111/j.1600-0528.2007.00395.x](https://doi.org/10.1111/j.1600-0528.2007.00395.x)] [PubMed: [18650957](https://pubmed.ncbi.nlm.nih.gov/18650957/)] PMC 2288569].
35. S. Lee, C. McGrath, N. Samman, Quality of life in patients with dentofacial deformity: a comparison of measurement approaches, *International Journal of Oral and Maxillofacial Surgery*. 2007 36(6); 488-492 [DOI: [10.1016/j.ijom.2007.01.011](https://doi.org/10.1016/j.ijom.2007.01.011)] [PubMed: [17339101](https://pubmed.ncbi.nlm.nih.gov/17339101/)].
36. Litt MD, Shafer DM, Ibanez CR, Kreutzer DL, Tawfik-Yonkers Z. Momentary pain and coping in temporomandibular disorder pain: exploring mechanisms of cognitive behavioral treatment for chronic pain. *Pain*. 2009 Sep;145(1-2):160-8. [DOI: [10.1016/j.pain.2009.06.003](https://doi.org/10.1016/j.pain.2009.06.003)] [PubMed: [19553018](https://pubmed.ncbi.nlm.nih.gov/19553018/)]. Epub 2009 Jun 23
37. Locker D. Disparities in oral health-related quality of life in a population of Canadian children. *Community Dent Oral Epidemiol*. 2007 Oct;35(5):348-56. [DOI: [10.1111/j.1600-0528.2006.00323.x](https://doi.org/10.1111/j.1600-0528.2006.00323.x)] [PubMed: [17822483](https://pubmed.ncbi.nlm.nih.gov/17822483/)].
38. Locker D, Jokovic A, Tompson B. Health-related quality of life of children aged 11 to 14 years with orofacial conditions. *Cleft Palate Craniofac J*. 2005 May;42(3):260-6. [DOI: [10.1597/03-077.1](https://doi.org/10.1597/03-077.1)] [PubMed: [15865459](https://pubmed.ncbi.nlm.nih.gov/15865459/)].
39. Lopez, S. J., Snyder, C. R., Rasmussen, H. N., & Cole, B. P. (2019). Striking a vital balance: Developing a complementary focus on human weakness and strength. In M. W. Gallagher & S. J. Lopez (Eds.), *Positive psychological assessment: A handbook of models and measures* (2nd ed., pp. 11-28). American Psychological Association. <https://doi.org/10.1037/0000138-002>.
40. Makhija SK, Gilbert GH, Boykin MJ, Litaker MS, Allman RM, Baker PS, Locher JL, Ritchie CS. The relationship between sociodemographic factors and oral health-related quality of life in dentate and edentulous community-dwelling older adults. *J Am Geriatr Soc*. 2006 Nov;54(11):1701-12. [DOI: [10.1111/j.1532-5415.2006.00923.x](https://doi.org/10.1111/j.1532-5415.2006.00923.x)] [PubMed: [17087697](https://pubmed.ncbi.nlm.nih.gov/17087697/)].
41. Mason J, Pearce MS, Walls AW, Parker L, Steele JG. How do factors at different stages of the lifecourse contribute to oral-health-related quality of life in middle age for men and women? *J Dent Res*. 2006 Mar;85(3):257-61. [DOI: [10.1177/154405910608500310](https://doi.org/10.1177/154405910608500310)] [PubMed: [16498074](https://pubmed.ncbi.nlm.nih.gov/16498074/)].
42. McArdle, J. J., & Bell, R. Q. (2000). An introduction to latent growth models for developmental data analysis. In T. D. Little, K. U. Schnabel, & J. Baumert (Eds.), *Modeling longitudinal and multilevel data: Practical issues, applied approaches, and specific examples* (pp. Lawrence Erlbaum Associates Publishers.
43. McGrath C, Bedi R. Measuring the impact of oral health on quality of life in Britain using OHQoL-UK©. *J Public Health Dent* 2003;63:73-77. [DOI: [10.1111/j.1752-7325.2003.tb03478.x](https://doi.org/10.1111/j.1752-7325.2003.tb03478.x)] [PubMed: [12816136](https://pubmed.ncbi.nlm.nih.gov/12816136/)].
44. McGrath, C., Broder, H. & Wilson-Genderson, M. (2004) Assessing the impact of oral health on the life quality of children: Implications for research and practice. *Community Dentistry and Oral Epidemiology*. 2004, 32 (2) pp 81-85 [DOI: [10.1111/j.1600-0528.2004.00149.x](https://doi.org/10.1111/j.1600-0528.2004.00149.x)] [PubMed: [15061856](https://pubmed.ncbi.nlm.nih.gov/15061856/)].
45. Mehrstedt M, John MT, Tönnies S, Micheelis W. Oral health-related quality of life in patients with dental anxiety. *Community Dent Oral Epidemiol*. 2007 Oct;35(5):357-63. [DOI: [10.1111/j.1600-0528.2007.00376.x](https://doi.org/10.1111/j.1600-0528.2007.00376.x)] [PubMed: [17822484](https://pubmed.ncbi.nlm.nih.gov/17822484/)].
46. Hershberger, S.L., & Moskowitz, D.S. (Eds.). *Modeling Intraindividual Variability With Repeated Measures Data: Methods and Applications* (1st ed.). 2001 Psychology Press. <https://doi.org/10.4324/9781410604477>
47. Mouradian WE. The face of a child: children's oral

- health and dental education. *J Dent Educ.* 2001 Sep;65(9):821-31. [DOI: [10.1002/j.0022-0337.2001.65.9.tb03429.x](https://doi.org/10.1002/j.0022-0337.2001.65.9.tb03429.x)] [PubMed: [11569597](https://pubmed.ncbi.nlm.nih.gov/11569597/)].
48. Mulligan R, Seirawan H, Alves ME, Navazesh M, Phelan JA, Greenspan D, Greenspan JS, Mack WJ. Oral health-related quality of life among HIV-infected and at-risk women. *Community Dent Oral Epidemiol.* 2008 Dec;36(6):549-57. doi: 10.1111/j.1600-0528.2008.00443.x. Epub 2008 Sep 8. [DOI: [10.1111/j.1600-0528.2008.00443.x](https://doi.org/10.1111/j.1600-0528.2008.00443.x)] [PubMed: [18782330](https://pubmed.ncbi.nlm.nih.gov/18782330/)].
49. Najman JM, Levine S. Evaluating the impact of medical care and technologies on the quality of life: a review and a critique. *Soc Sci Med* (1967). 1981 Jun-Sep;15F(2-3):107-15. [DOI: [10.1016/0271-5392\(81\)90012-5](https://doi.org/10.1016/0271-5392(81)90012-5)]. [PMID: 11662011]
50. Ng SK, Leung WK. Oral health-related quality of life and periodontal status. *Community Dent Oral Epidemiol.* (2006) 34:114-22. [DOI: [10.1111/j.1600-0528.2006.00267.x](https://doi.org/10.1111/j.1600-0528.2006.00267.x)] [PubMed: [16515675](https://pubmed.ncbi.nlm.nih.gov/16515675/)].
51. Osoba D, Rodrigues G, Myles J, Zee B, Pater J. Interpreting the significance of changes in health-related quality-of-life scores. *J Clin Oncol.* 1998 Jan;16(1):139-44. doi: 10.1200/JCO.1998.16.1.139. Corrected and republished in: *J Clin Oncol.* 2023 [DOI: [10.1200/JCO.1998.16.1.139](https://doi.org/10.1200/JCO.1998.16.1.139)] [PubMed: [9440735](https://pubmed.ncbi.nlm.nih.gov/9440735/)].
52. Pahel BT, Rozier RG, Slade GD. Parental perceptions of children's oral health: the Early Childhood Oral Health Impact Scale (ECOHIS). *Health Qual Life Outcomes.* 2007 Jan 30;5:6. [DOI: [10.1186/1477-7525-5-6](https://doi.org/10.1186/1477-7525-5-6)] [PubMed: [17263880](https://pubmed.ncbi.nlm.nih.gov/17263880/)]. [PMC1802739].
53. Patrick, D.L. and Erickson, P. (1993) Health status and health policy: Quality of life in health care evaluation and resource allocation. Oxford University Press, New York.
54. Patrick DL, Edwards TC, Topolski TD. Adolescent quality of life, part II: initial validation of a new instrument. *J Adolesc.* 2002 Jun;25(3):287-300. [DOI: [10.1006/jado.2002.0471](https://doi.org/10.1006/jado.2002.0471)] [PubMed: [12128039](https://pubmed.ncbi.nlm.nih.gov/12128039/)].
55. Patrick DL, Topolski TD, Edwards TC, Aspinall CL, Kapp-Simon KA, Rumsey NJ, Strauss RP, Thomas CR. Measuring the quality of life of youth with facial differences. *Cleft Palate Craniofac J.* 2007 Sep;44(5):538-47. [DOI: [10.1597/06-072.1](https://doi.org/10.1597/06-072.1)] [PubMed: [17760483](https://pubmed.ncbi.nlm.nih.gov/17760483/)].
56. Petersen PE, Bourgeois D, Ogawa H, Estupinan-Day S, Ndiaye C. The global burden of oral diseases and risks to oral health. *Bull World Health Organ.* 2005 Sep;83(9):661-9. Epub 2005 Sep 30. PMID: PMC2626328. [PubMed: [16211157](https://pubmed.ncbi.nlm.nih.gov/16211157/)].
57. Ralstrom, Elizabeth Frances. The Impact of Oral Health in Adolescent Patients with Sickle Cell Disease. Thesis Presented in Partial Fulfilment of the Requirements for the Degree Master of Science in the Graduate school of The Ohio State University. 2010. [http://rave.ohiolink.edu/etdc/view?acc\\_num=osu1274754100](http://rave.ohiolink.edu/etdc/view?acc_num=osu1274754100)
58. Sanders AE. A Latino advantage in oral health-related quality of life is modified by nativity status. *Soc Sci Med.* 2010 Jul;71(1):205-11. doi: 10.1016/j.socscimed.2010.03.031. Epub 2010 Apr 13. [DOI: [10.1016/j.socscimed.2010.03.031](https://doi.org/10.1016/j.socscimed.2010.03.031)] [PubMed: [20434250](https://pubmed.ncbi.nlm.nih.gov/20434250/)].
59. Yuwanati M, Gondivkar S, Sarode SC, Gadbaile A, Desai A, Mhaske S, Pathak SK, N Khatib M. Oral health-related quality of life in oral cancer patients: systematic review and meta-analysis. *Future Oncol.* 2021 Mar;17(8):979-990. doi: 10.2217/fo-2020-0881. Epub 2021 Feb 5. PMID: 33541115.
60. Sisson KL. Theoretical explanations for social inequalities in oral health. *Community Dent Oral Epidemiol.* 2007 Apr;35(2):81-8. [DOI: [10.1111/j.1600-0528.2007.00354.x](https://doi.org/10.1111/j.1600-0528.2007.00354.x)] [PubMed: [17331149](https://pubmed.ncbi.nlm.nih.gov/17331149/)].
61. Allen, P.F. Assessment of oral health related quality of life. *Health Qual Life Outcomes* 1, 40 (2003). <https://doi.org/10.1186/1477-7525-1-40>.
62. Slade GD, Spencer AJ. Development and evaluation of the Oral Health Impact Profile. *Community Dent Health.* 1994 Mar;11(1):3-11. [PubMed: [8193981](https://pubmed.ncbi.nlm.nih.gov/8193981/)].
63. Sloan JA, Cella D, Frost M, Guyatt GH, Sprangers M, Symonds T; Clinical Significance Consensus Meeting Group. Assessing clinical significance in measuring oncology patient quality of life: introduction to the symposium, content overview, and definition of terms. *Mayo Clin Proc.* 2002 Apr;77(4):367-70. [DOI: [10.4065/77.4.367](https://doi.org/10.4065/77.4.367)] [PubMed: [11936934](https://pubmed.ncbi.nlm.nih.gov/11936934/)].
64. Strauss RP. "Only skin deep": health, resilience, and craniofacial care. *Cleft Palate Craniofac J.* 2001 May;38(3):226-30. [DOI: [10.1597/1545-1569\\_2001\\_038\\_0226\\_osdhra\\_2.0.co\\_2](https://doi.org/10.1597/1545-1569_2001_038_0226_osdhra_2.0.co_2)] [PubMed: [11386429](https://pubmed.ncbi.nlm.nih.gov/11386429/)].
65. Tapsoba H, Deschamps JP, Leclercq MH. Factor analytic study of two questionnaires measuring oral health-related quality of life among children and adults in New Zealand, Germany and Poland. *Qual Life Res.* 2000;9(5):559-69. [DOI: [10.1023/a:1008931301032](https://doi.org/10.1023/a:1008931301032)] [PubMed: [11190010](https://pubmed.ncbi.nlm.nih.gov/11190010/)].
66. Turk DC. "Statistical significance and clinical significance are not synonyms!". *Clin J Pain.* 2000 Sep;16(3):185-7. [DOI: [10.1097/00002508-200009000-00001](https://doi.org/10.1097/00002508-200009000-00001)]. PMID: 11014389.
67. Turner JA, Mancl L, Aaron LA. Short- and long-term efficacy of brief cognitive-behavioral therapy for patients with chronic temporomandibular disorder pain: a randomized, controlled trial. *Pain.* 2006 Apr;121(3):181-194. [DOI: [10.1016/j.pain.2005.11.017](https://doi.org/10.1016/j.pain.2005.11.017)] [PubMed: [16495014](https://pubmed.ncbi.nlm.nih.gov/16495014/)].
68. World Health Organization constitution. <https://www.who.int/about/accountability/governance/constitution>. Retrieve on 23 Feb 2023.
69. Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century--the approach of the WHO Global Oral Health Programme. *Community Dent Oral Epidemiol.* 2003

Dec;31 Suppl 1:3-23. doi: 10.1046/j..2003.com122.x.  
PMID: 15015736.

70. The World Health Organization Quality of Life assessment (WHOQOL): position paper from the World Health Organization. *Soc Sci Med*. 1995 Nov;41(10):1403-[DOI: [10.1016/0277-9536\(95\)00112-k](https://doi.org/10.1016/0277-9536(95)00112-k)] [PubMed: [8560308](https://pubmed.ncbi.nlm.nih.gov/8560308/)].
71. Wilson IB, Cleary PD. Linking clinical variables with health-related quality of life. A conceptual model of patient outcomes. *JAMA*. 1995 Jan 4;273(1):59-65. PMID: 7996652. [DOI: [10.1001/jama.1995.03520250075037](https://doi.org/10.1001/jama.1995.03520250075037)] [PubMed: [7996652](https://pubmed.ncbi.nlm.nih.gov/7996652/)].
72. Wilson-Genderson M, Broder HL, Phillips C. Concordance between caregiver and child reports of children's oral health-related quality of life. *Community Dent Oral Epidemiol*. 2007 Aug;35 Suppl 1:32-40. [DOI: [10.1111/j.1600-0528.2007.00403.x](https://doi.org/10.1111/j.1600-0528.2007.00403.x)] [PubMed: [17615048](https://pubmed.ncbi.nlm.nih.gov/17615048/)].
73. Wright WG, Jones JA, Spiro A 3rd, Rich SE, Kressin NR. Use of patient self-report oral health outcome measures in assessment of dental treatment outcomes. *J Public Health Dent*. 2009 Spring;69(2):95-103. DOI: [10.1111/j.1752-7325.2008.00106.x](https://doi.org/10.1111/j.1752-7325.2008.00106.x) [PubMed: [19054312](https://pubmed.ncbi.nlm.nih.gov/19054312/)].
74. Wyrwich KW, Bullinger M, Aaronson N, Hays RD, Patrick DL, Symonds T; Clinical Significance Consensus Meeting Group. Estimating clinically significant differences in quality of life outcomes. *Qual Life Res*. 2005 Mar;14(2):285-95 [DOI: [10.1007/s11136-004-0705-2](https://doi.org/10.1007/s11136-004-0705-2)] [PubMed: [15892420](https://pubmed.ncbi.nlm.nih.gov/15892420/)].
75. Heyland DK, Johnson AP, Reynolds SC, Muscedere J. Procalcitonin for reduced antibiotic exposure in the critical care setting: a systematic review and an economic evaluation. *Crit Care Med*. 2011 Jul;39(7):1792-9. [DOI: [10.1097/CCM.0b013e31821201a5](https://doi.org/10.1097/CCM.0b013e31821201a5)] [PubMed: [21358400](https://pubmed.ncbi.nlm.nih.gov/21358400/)].