International Journal Dental and Medical Sciences Research
Volume 7, Issue 1, Jan - Feb 2025 pp 266-271 www.ijdmsrjournal.com ISSN: 2582-6018

# A Review Article on Oral Health Related Quality Of Life and Its Association with Malocclusion

Dr. Alka Dubey, Dr.Ram. K. Ratre., Dr.Gauravardhan Kulkarni,
Dr. Varsha Dogra, Dr. Shafna Abid, Dr. Bhumika Daheriya
[1,4,5,6,] *Resident,Govt. Autonomous College of Dentistry, Indore*
[2,] *Professor,Govt. Autonomous College of Dentistry, Indore*
[2,] *Associate Professor,Govt. Autonomous College of Dentistry, Indore*

---

Date of Submission: 05-02-2025 Date of Acceptance: 15-02-2025

---

**ABSTRACT**:
**Objective:** The purpose of this article is to critically examine the relationship between malocclusion and oral health-related quality of life (OHRQoL).
**Methods**: A review of the data from earlier papers was conducted. Randomized controlled trials, reviews, meta-analyses, cross-sectional studies, prospective and retrospective longitudinal studies were all included. In order to learn further about the numerous indicators used to measure OHRQoL and to ascertain the impact of malocclusion on OHRQoL, these full-text English-language studies were examined.
**Results**: Many research indicate that malocclusion has a detrimental effect on oral health; however, two recent systematic reviews suggest that these findings may not be entirely consistent. Age, sex, the degree of malocclusion, sociodemographic factors, malocclusion measurements, and OHRQoL are the causes.
**Conclusion**: Patient-centred evaluation has received a lot more attention in the ultramodern era. Malocclusion has a direct and definite effect on OHRQoL.
**KEYWORDS:** Oral health, OHRQoL, Malocclusion, Sociodemographic, Ultramodern..

## I. INTRODUCTION

**Important terminologies:**
**Health:** "Health is a state of complete physical, mental, and social well-being and not merely the absence of disease and infirmity."- WHO (1946)

**QoL (Quality of Life)** is defined as "perceptions of one's position in life in the context of culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns" (WHOQOL, 1995). Also, "quality of life concerned with the degree to which a person en the important possibilities of life." (1)

**HRQoL(Health Related Quality of Life)**(Gift and Atchison, 1995) is a multidimensional construct capturing subjective aspects of health(2).

**Oral Health**: It is defined as the capacity to speak, smile, smell, taste, touch, chew, swallow, and confidently express a variety of emotions through facial expressions without experiencing pain, discomfort(3).Craniofacial diseases are also important aspect of oral health.

**The OHRQoL** concept arose around 1976 through the initial work of Cohen and Jago(4). OHRQOL is defined as "a multidimensional construct that reflects (among other things) people's self-esteem, their satisfaction with their oral health, and their comfort when eating, sleeping, and interacting with others"(5)

## II. CONCEPT OF OHRQOL

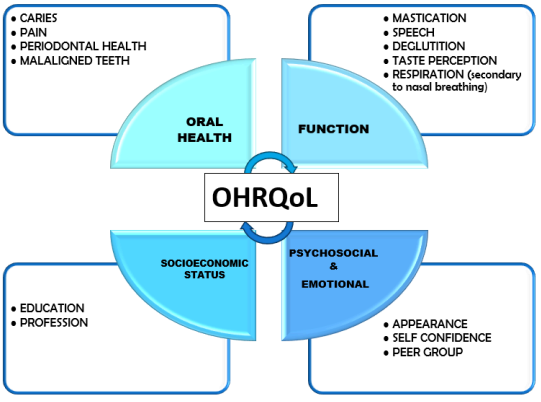


FIGURE 1; FACTORS AFFECTING OHRQoL

symptoms and experiences. It covers both the

advantages and disadvantages of dental health. There are differences in oral health expectations and experiences among age groups. Therefore, several confounding factors, such as age, gender, ethnicity, socioeconomic strata, etc., also distort the quality of life. It's a very personalized idea. Many authors have developed indices to measure OHRQoL. Table 1 summarizes a few of these. Prioritizing issues, enhancing communication, looking for hidden issues, and tracking changes are all enhanced by using these indices.(6) Validity, appropriateness, acceptability, reliability, responsiveness to change, and interpretability are important.

## III. METHODS

Systematic reviews, meta-analysis, narrative reviews, retrospective and prospective studies published since 2011 till August 2024 were searched and taken into consideration in framing of this paper. Only full text English language studies were examined.

## IV. RESULTS

The relationship between dental health and life quality emphasizes the need for all-encompassing strategies that give individual and community care top priority. In this situation, education is essential; educating patients about the value of maintaining good oral hygiene, the repercussions of neglect, and the connection between oral health and overall health can enable them to take charge of their oral health.

Additionally, increasing patient knowledge cultivates a sense of accountability, motivating people to maintain preventive habits and schedule routine dental care. Initiatives from society are just as important as individual ones. Promoting oral health awareness through public health campaigns and community-based initiatives can help close gaps and increase access to care, especially for marginalized groups. Together, these initiatives not only improve the state of oral health generally but also foster cultures that focus on and appreciate oral health.

OHRQoL results can be greatly enhanced by incorporating educational tactics into healthcare systems and involving the community. Given that oral health is an essential part of overall health, health professionals must support comprehensive policies that encourage oral health education and access to care. Emphasizing this holistic approach will ensure that oral health remains an integral aspect of preventive & social medicine along with practices that pave the way for a healthier future.

## V. DISCUSSION

### Malocclusion and OHRQoL

A variation from an anatomical norm that happens in different populations is called malocclusion. Research indicates that it affects the patient's oral health-related quality of life (OHRQoL) and has physical and psychological effects. It has been documented that malocclusion affects a patient's psychological health, function, appearance, and interpersonal connections. Although adults are not immune to this type of dental imperfection, malocclusion primarily affects children and adolescents.

Approximately 35–45% of children and adolescents require orthodontic treatment due to a more severe form of malocclusion, while 70% of all children and adolescents have some kind of malocclusion (9–12). Malocclusions that go untreated can have a detrimental effect on oral health (13). OHRQoL is adversely affected by malocclusions in children and adolescents, according to several prior systematic reviews (14–17). Conversely, two further recent systematic reviews found that there is insufficient evidence to support the idea that malocclusions negatively affect oral health (18) and that there is conflicting evidence on their effects on OHRQoL (19).

Additionally, different types of malocclusions may have different effects on OHRQOL (20). The patient's age and gender, dental caries, and socioeconomic position are all possible confounders in the association between malocclusions and OHRQoL. Prior findings regarding age and OHRQoL are contradictory, as it has been demonstrated that OHRQoL declines between the ages of 12-15 years and that it increases between the ages of 11-12 years and 14-15 years (21). The conflicting findings might be a sign of how complicated puberty is. According to certain research, girls are more unhappy with their teeth than boys (23).

Additionally, adolescents with lower socioeconomic level and a larger need for orthodontic treatment had lower OHRQoL (24–28). After controlling for various confounders, Goranson et al.'s comprehensive review and meta-analysis demonstrated that malocclusions in adolescents have a detrimental effect on OHRQoL(29).

International Journal Dental and Medical Sciences Research
Volume 7, Issue 1, Jan - Feb 2025 pp 266-271 www.ijdmsrjournal.com ISSN: 2582-6018

TABLE 1: INDICES USED TO MEASURE OHRQoL

| S.No. | INDICES TO MEASURE | AUTHORS | YEAR |
|---|---|---|---|
| 1. | THE SOCIAL IMPACTS OF DENTAL DISEASE | E Aubrey Sheiham, Annie M. Cushing, Joan Maizels | 1986 |
| 2. | ORAL HEALTH AND THE SICKNESS IMPACT PROFILE | Susan Reisine | 1988 |
| 3. | DENTAL HEALTH QUESTIONS FROM THE RAND HEALTH INSURANCE STUDY | Teresa A. Dolan | 1991 |
| 4. | THE GENERAL ORAL HEALTH ASSESSMENT INDEX (The Geriatric Oral Health Assessment Index) | Kathryn A. Atchison | 1990 |
| 5. | THE DENTAL IMPACT PROFILE | Ronald P. Strauss | 1993 |
| 6. | THE ORAL HEALTH IMPACT PROFILE (OHIP) | Gary D. Slade | 1994 |
| 7. | SUBJECTIVE ORAL HEALTH STATUS INDICATORS | David Locker | 1994 |
| 8. | THE ORAL HEALTH-RELATED QUALITY OF LIFE MEASURE (OHRQoL) | Nancy R. Kressin | 1996 |
| 9. | THE DENTAL IMPACT ON DAILY LIVING | Anna T. Leao, Aubrey Sheiham | 1996 |
| 10. | ORAL HEALTH QUALITY OF LIFE INVENTORY (OH-QoL) | John E. Cornell, Michele J. Saunders, Eleonore D. Paunovich, Michael B. Frisch | 1994 |
| 11. | ORAL IMPACTS ON DAILY PERFORMANCES | Supreda Adulyanon, Aubrey Sheiham, | 1997 |
| 12. | ORAL HEALTH QUALITY OF LIFE -UK | Colman McGrath & Raman Bedi | 2001 |
| 13. | CHILD PERCEPTION QUESTIONNAIRE | Foster Page L A | 2005 |
| 14. | MICHIGAN OHRQoL SCALE | Filstrup et al. | 2003 |
| 15. | CHILD OIDP (Oral Impact on Daily Performances) | Gherunpong S et al. | 2004 |
| 16. | CHILD OHIP | Hillary L Broder, Colman McGrath, George J Cisneros | 2007 |

According to research, malocclusion in kids and teenagers can cause functional issues like speaking and chewing, which can negatively impact social relationships and self-esteem (30,31). Due to perceived aesthetic concerns, adolescents with malocclusion report worse OHRQoL, which increases psychological discomfort, according to research (32, 33). To address both functional and aesthetic concerns and eventually improve the quality of life for younger populations, early orthodontic intervention is necessary, as this psychological burden highlights (34, 35).

Malocclusion in adults has effects that go beyond appearance and affect general health and wellbeing. Malocclusion has been linked in studies to several health problems, such as periodontal disease and temporomandibular joint disorders, which can further lower OHRQoL (36,37). Malocclusion in adults frequently results in poor oral hygiene, which aggravatesperiodontal diseases and cancause tooth loss (38, 39). Furthermore,malocclusion's social stigma can affect both personal and professional relationships, underscoring the necessity of complete dental care and adult-focused public awareness campaigns (40, 41).

Pre-existing malocclusion exacerbates age-related variables, including tooth loss and decreased oral function, making chewing and swallowing challenging (42)

According to research, older persons who have malocclusion frequently endure greater degrees of pain and discomfort, which impairs their capacity to eat a balanced diet and, ultimately, their general health. In addition to improving oral health, treating malocclusion in this age group is crucial for raising their quality of life through improved pain management and nutrition.

Developing focused interventions that address the functional and psychosocial facets of oral health requires an understanding of the various effects of malocclusion. To improve oral health outcomes and the quality of life for people of all ages, it will be crucial to prioritize research and public health activities focused on managing and preventing malocclusion as the population ages

**Present values and future implications of research and OHRQoL**

According to recent research, dental health can affect a number of life domains, such as social, psychological, and physical elements. The General Oral Health Assessment Index (GOHAI) and the Oral Health Impact Profile (OHIP) are two important tools for measuring how oral health issues affect day-to-day functioning (42) According to research, diseases such as edentulism, gum disease, and tooth decay can cause pain, discomfort, and functional limits. These issues can then have an impact on social relationships and self-esteem.

Despite progress, there are still a lot of unanswered questions about the complex aspects of OHRQoL. By capturing complex individual experiences and cultural factors that quantitative measures could miss, the incorporation of qualitative research methods could improve our understanding of OHRQoL.

In the future, interdisciplinary methods that integrate viewpoints from public health, sociology, and psychology could be advantageous for OHRQoL research. OHRQoL research can also benefit from technological advancements; telemedicine and mobile health apps provide novel ways to collect data in real time, allowing researchers to compile detailed information on patients' experiences

In summary, OHRQoL research is at a critical juncture, even if its current state has established a strong basis. For OHRQoL to become a crucial part of health research and policy, future approaches should prioritize inclusion, interdisciplinary collaboration, and methodological innovation.

**ACKNOWLEDGEMENTS**

Especially, I would like to thank Dr. Sandhya Jain, HOD Department of Orthodontics, GDC Indore, for her valuable guidance and assistance in the course of this article writing.

## REFERENCES

[1]. Raphael D, Brown I, Renwick R, Rootman I. Quality of life theory and assessment: what are the for Health Promotion, 1994.

[2]. Patrick DL; Erickson P. Health status and health policy. Quality of life in health care evaluation and resource allocation. New York: Oxford University Press; 1993

[3]. A new definition for oral health developed by the FDI World Dental Federation opens the door to a universal definition of oral health Glick, Michael et al.The Journal of the American Dental Association, Volume 147, Issue 12, 915 - 917

[4]. Cohen L, Jago J. Toward the formulation of sociodental indicators. Int J Health Serv 1976; 6:681-7.

[5]. US Department of Health and Human Services. (2000) Oral health in America: a report of the surgeon general— executive summary. https://www.nidcr.nih.gov/sites/default/files/2017-10/ hck1ocv.%40www.surgeon.fullrpt.pdf (26 August 2022, date last accessed).

[6]. DHHS Oral health in America: A report of the Surgeon General. Rockville, Maryl and: US Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institute of Health; 2000. p. 7.

[7]. Inglehart MR, Bagramian RA. Inglehart MR, Bagramian RA. Oral Health Related Quality of Life. Illinois: Quintessence Publishing Co. Inc.; 2002.

[8]. Locker D, Miller Y. Evaluation of subjective oral health status indicators. J Public Health Dent 1994;54:167-76.

[9]. Thilander, B. and Myrberg, N. (1973) The prevalence of malocclusion in Swedish schoolchildren. Scandinavian Journal of Dental Research, 81, 12–21. doi:10.1111/j.1600-0722.1973.tb01489.x

[10]. Helm, S. (1968) Malocclusion in Danish children with adolescent dentition: an epidemiologic study. American Journal of Orthodontics and Dentofacial Orthopedics, 54, 352–366.

[11]. Dimberg, L., Lennartsson, B., Arnrup, K. and Bondemark, L. (2015) Prevalence and change of malocclusions from primary to early permanent dentition: a longitudinal study. Angle Orthodontist, 85, 728–734. doi:10.2319/080414-542.1

[12]. Bjerklin, K., Sagevik Tunge, J. and Sjövall, C. (2012) Orthodontic treatment need, outcome and residual treatment need in 15- and 20-year-olds. Swedish Dental Journal, 36, 157–165.

[13]. Cunningham, S.J. and Hunt, N.P. (2001) Quality of life and its importance in orthodontics. Journal of Orthodontics, 28, 152–158. doi:10.1093/ortho/28.2.152

[14]. Liu, Z., McGrath, C. and Hägg, U. (2009) The impact of malocclusion/orthodontic treatment need on the quality of life: a systematic review. Angle Orthodontist, 79, 585–591.

[15]. Kragt, L., Dhamo, B., Wolvius, E.B. and Ongkosuwito, E.M. (2015) The impact of malocclusions on oral health-related quality of life in children: a systematic review and meta-analysis. Clinical Oral Investigations, 20, 1881–1894. doi:10.1007/s00784-015-1681-3

[16]. Sun, L., Wong, H.M. and McGrath, C.P. (2017) Relationship between the severity of malocclusion and oral health-related quality of life: a systematic review and meta-analysis. Oral Health and Preventive Dentistry, 15, 503–517. doi:10.3290/j.ohpd.a38994

[17]. Dimberg, L., Arnrup, K. and Bondemark, L. (2015) The impact of malocclusion on the quality of life among children and adolescents: a systematic review of quantitative studies. European Journal of Orthodontics, 37, 238–247. doi:10.1093/ejo/cju046.

[18]. Macey, R., Thiruvenkatachari, B., O'Brien, K. and Batista, K. (2020) Do malocclusion and orthodontic treatment impact oral health? A systematic review and meta-analysis. American Journal of Orthodontics and Dentofacial Orthopedics, 157, 738–744.e10.

[19]. Alrashed, M. and Alqerban, A. (2021) The relationship between malocclusion and oral health-related quality of life among adolescents: a systematic literature review and meta-analysis. European Journal of Orthodontics, 43, 173–183. doi:10.1093/ejo/ cjaa051

[20]. Kallunki, J., Sollenius, O., Paulsson, L., Petrén, S., Dimberg, L. and Bondemark, L. (2019) Oral health-related quality of life among children with excessive overjet or unilateral posterior crossbite with functional shift compared to children with no or mild orthodontic treatment need. European Journal of Orthodontics, 41, 111–116. doi:10.1093/ejo/cjy033

[21]. Benson, P.E., Da'as, T., Johal, A., Mandall, N.A., Williams, A.C., Baker, S.R. and Marshman, Z. (2015) Relationships between dental appearance, self-esteem, socio-economic status, and oral health-related quality of life in UK schoolchildren: a 3-year cohort study. European Journal of Orthodontics, 37, 481–490. doi:10.1093/ejo/cju076

[22]. Sun, L., Wong, H.M. and McGrath, C.P.J. (2020) A cohort study of factors that influence oral health-related quality of life from age 12 to 18 in Hong Kong. Health and Quality of Life Outcomes, 18, 65. doi:10.1186/s12955-020-01317-z

[23]. Lilja-Karlander, E., Kurol, J. and Josefsson, E. (2003) Attitudes and satisfaction with dental appearance in young adults with and without malocclusion. Swedish Dental Journal, 27, 143–150.
[24]. Zaborskis, A., Kavaliauskienė, A. and Šidlauskas, A. (2019) Family affluence-based inequality in oral health-related quality of life in a population of Lithuanian adolescents. International Journal of Environmental Research and Public Health, 16, 12. doi:10.3390/ ijerph16122106
[25]. Tickle, M., Kay, E.J. and Bearn, D. (1999) Socio-economic status and orthodontic treatment need. Community Dentistry and Oral Epidemiology, 27, 413–418. doi:10.1111/j.1600-0528.1999. tb02040.x
[26]. Sfreddo, C.S., Moreira, C.H.C., Nicolau, B., Ortiz, F.R. and Ardenghi, T.M. (2019) Socioeconomic inequalities in oral health-related quality of life in adolescents: a cohort study. Quality of Life Research, 28, 2491–2500. doi:10.1007/s11136-019-02229-2
[27]. Ravaghi, V., Baker, S.R., Benson, P.E., Marshman, Z. and Morris, A.J. (2019) Socioeconomic variation in the association between malocclusion and oral health-related quality of life. Community Dental Health, 36, 17–21. doi:10.1922/ CDH_4388Ravaghi05
[28]. Badran, S.A., Sabrah, A.H., Hadidi, S.A. and Al-Khateeb, S. (2014) Effect of socioeconomic status on normative and perceived orthodontic treatment need. Angle Orthodontist, 84, 588–593. doi:10.2319/062913-482.1\
[29]. Göranson, Emma, et al. "Malocclusions and quality of life among adolescents: a systematic review and meta-analysis." European Journal of Orthodontics 45.3 (2023): 295-307.
[30]. Graham, A. A., et al. (2019). "OHRQoL in Children with Malocclusion." European Journal of Orthodontics, 41(4), 382-389.
[31]. Al Agili, F. E., et al. (2020). "Impact of Malocclusion on Quality of Life in Adolescents." Saudi Dental Journal, 32(1), 1-8.
[32]. Kumar, S., et al. (2018). "Psychosocial Effects of Malocclusion in Adolescents." Indian Journal of Dental Research, 29(2), 176-182.
[33]. Perillo, L., et al. (2021). "Aesthetic Perceptions of Malocclusion in Adolescents." Angle Orthodontist, 91(2), 210-217.
[34]. Micheletti, J. K., et al. (2018). "Early Orthodontic Intervention and Quality of Life." Journal of Pediatric Dentistry, 32(6), 550-556.
[35]. Bhalang, K., et al. (2019). "Orthodontic Treatment and OHRQoL in Adolescents." American Journal of Orthodontics and Dentofacial Orthopedics, 155(6), 820-826.
[36]. Katz, B. P., et al. (2019). "Malocclusion and Oral Health Outcomes in Adults." Community Dentistry and Oral Epidemiology, 47(4), 305-311.
[37]. Fattah, M. A., et al. (2020). "Association of Malocclusion and Temporomandibular Disorders." Journal of Oral Rehabilitation, 47(2), 194-202.
[38]. Bello, L. M., et al. (2020). "Periodontal Health and Malocclusion in Adults." Brazilian Oral Research, 34(1), e017.
[39]. Mendez, M., et al. (2021). "Malocclusion, Oral Hygiene, and Periodontal Health." Journal of Periodontology, 92(8), 1094-1101.
[40]. Jiang, Y., et al. (2020). "Social Perceptions of Malocclusion in Adults." Journal of Clinical Orthodontics, 54(5), 283-290.
[41]. Alhassan, A. S., et al. (2021). "Malocclusion and Psychological Distress in Adults." BMC Oral Health, 21(1), 48.
[42]. Dumitrescu, A. L., & Wayne, B. (2014). "Oral Health Impact Profile: Reliability and Validity." Community Dentistry and Oral Epidemiology, 42(3), 233-241.