A Brief Note on of Dental Fluorosis Effect on Oral Health

Shyam Kumar*

Department of Public Health Dentistry, University of Health Sciences, India

Abstract

This study examines the impact of dental fluorosis on the quality of life (OHRQoL) of schoolchildren aged 11 to 14 in India's fluorine-endemic districts of Haryana. Methods and materials: A cross-sectional study included 2,200 schoolchildren from fluoride-endemic areas in Haryana [1]. Using cluster random sampling, children between the ages of 11 and 14 were tested in three of the 14 regions where fluoride is endemic. A child perception questionnaire (CPQ11-14) (Hindi version) was used to evaluate the impact of dental fluorosis on OHRQoL. The Thylstrup-Fejerskov index (TFI) was utilized in the evaluation of dental fluorosis. After the data were analyzed with SPSS version 18, non-parametric tests were used to determine the significance. Regression analysis was used to look at how a change in CPQ affected things. Gentle to direct dental fluorosis was found in the review's members, who made up 45.3% of men and 54.7% of ladies, with mean TFI scores of 3.19 and 1.55, separately [2]. The percentage of children who rated their oral health as excellent or good was 1.17 times higher among those who did not have dental fluorosis (P 0.05). The mean CPQ11-14 domain and overall scores of study participants with dental fluorosis were not significantly higher than those of participants without the condition. Minor dental fluorosis did not have any negative effects on OHRQoL for children living in the fluoride-endemic districts of Haryana, India.

Keywords: Oral Fluorosis; CPQ11–14; OHRQoL; 2. TF Index

Introduction

A high level of oral health-related quality of life (OHRQoL) is an essential component of health and happiness. The oral health and quality of life (OHRQoL) measure looks at how a person's daily functioning, sense of well-being, and overall quality of life are affected by oral health or disorders [3]. Over the past few decades, numerous studies have investigated the connection between various health-related events and their effects on quality of life (QoL). The findings have demonstrated that the improvement in quality of life ought to be a significant determinant of the effectiveness of health care services. Low OHRQoL has been linked to debilitating oral conditions like dental caries, periodontal infections, maxillofacial injuries, neuralgias, developmental flaws, and head and neck tumors3,4, according to numerous studies [4]. Numerous oral health issues, such as untreated dental caries, edentulous areas, periodontal disease, malocclusion, temporal-mandibular joint abnormalities, and tooth discoloration5-7, frequently result in poor OHRQoL in young children. Since they can't smile or interact with others, people with dental fluorosis frequently have low self-esteem and feel bad about themselves, according to reports [5].

Materials and Strategies

As per Chankanka et alsystematic. In summary, OHRQoL is lower in people with severe dental fluorosis than in people with extremely mild or mild fluorosis. Fluoride intake spikes during tooth development lead to dental fluorosis, which has a negative impact on oral health and quality of life. Exposure to fluoride increases the likelihood of dental caries, tooth wear, and fracture, as the enamel becomes porous, pitted, and discolored. In India, dental fluorosis influences 15 out of the country's 32 states, making it a significant general medical problem. It is most prevalent in the states of Bihar, Tamil Nadu, Andhra Pradesh, Gujarat, Rajasthan, Punjab, and Haryana [6]. because of the utilization of water that has a great deal of fluoride in drinking supplies. In India, the majority of people drink groundwater heavily, increasing their risk of developing dental fluorosis. Ground water in six districts in the state of Haryana contains medium to high levels of fluoride: Ambala, Kurukshetra, Kaithal, Panipat, Panchkula, and Yamunanagar.

Study design and setting

There is still a lack of information about how dental fluorosis affects OHRQoL in school-aged children. Depending on how much the enamel mottling affects how they perceive beauty, dental fluorosis may have a variety of effects on children's quality of life. The findings of the study may alert administrators to the severity of dental fluorosis so that de-fluoridation programs to prevent dental fluorosis can be initiated and carried out. It is important to determine how dental fluorosis affects Indian schoolchildren's OHRQoL [7]. It is essential to determine how dental fluorosis affects the OHRQoL of schoolchildren aged 11 to 14 in light of this and the fact that there are not many comprehensive studies of the entire Indian community. From August 2015 to February 2016, a cross-sectional review was led to survey the impacts of dental fluorosis on OHRQoL in schoolchildren matured 11 to 14 in Haryana (India), a region with an endemic fluoride issue. The project was approved by the ethics committee of the Post Graduate Institute of Dental Sciences, Rohtak (PGIDS/IEC/2015/56). This investigation was carried out in accordance with the Declaration of Helsinki of the World Medical Association, in addition to adhering to the STROBE standards for observational studies. For official approval, the District Education Officer and all relevant school authorities were contacted [8]. All participating children's parents were given written consent and informed of the study's necessity and objectives. The program did not include children who did not have parental informed consent, were uncooperative, had systemic illnesses, or had other developmental issues.

Method of sampling

The sample size was calculated using the results of a pilot study to determine the clinical difference in CPQ scores of one between two groups with and without dental fluorosis at a 5% statistical significance level, 80% power, and a pooled standard deviation of 5.65. 502 people were expected in the sample. In this cluster-based investigation, the authors' previous study's intra-cluster correlation coefficient of 0.025 was taken into account. The design effect was determined to be 1.925 using the average cluster size of 40. Thus, the final sample consisted of 970 individuals from each group. According to data from the central ground water board of Haryana, fourteen districts had elevated concentrations.

Cluster random selection was used to select three of the 14 districts that were used in the study. In each of the three districts, fluoride levels in the water ranged from 0.23 to 4.30 ppm18. Furthermore, two tehsils (nearby regions) from each locale were picked utilizing an essential irregular example method. Each tehsil was given six schools to choose from, two of which came from the city and four from the countryside. 30 to 50 students, with 40 being the typical cluster size, were selected from each school. Data were collected through a combination of questionnaire administration and clinical examination for the purpose of assessing dental fluorosis [9].

Development of the questionnaire

A Hindi-language structured CPQ11-14 questionnaire was created prior to distribution to the subjects. The 13 questions were divided into four broad domains: oral symptoms (6 items), functional limits (9 items), emotional well-being (9 items), and social well-being. From 0 (the best) to 4 (the worst) were the responses to the item's conditions. The scores from other domains were added to the average score for each question for each domain. On a scale from one to ten, children were asked to rate their oral health, and they were also asked how much their oral health affected their overall health. In the original questionnaire, each of these two items had a five-point response. The responses were rated as follows for the overall rating of oral health: 0), excellent, excellent, very good, good, fair, and poor; and how much better their oral health has become [10].

Conclusion

The intraclass correlation coefficient (ICC) and test-retest analysis revealed that the questionnaire has a reliability of 0.80. Cronbach's alpha coefficients for various CPQ(11–14) variations were investigated, including those for oral symptoms (0.71), functional restrictions (0.56), emotional well-being (0.77), and social well-being (0.77). The children were instructed to self-complete the questionnaire and mark the responses they believed to be accurate by checking the boxes next to them. The investigator's training and calibration were overseen by a trained expert from the Department of Public Health Dentistry. The intra-examiner reliability showed a satisfactory agreement (89 percent). The study did exclude copy tests to follow between inspector dependability.

References

1. Pelletier KR (2009) A review and analysis of the clinical and cost-effectiveness studies of comprehensive health promotion and disease management programs at the worksite: Update VII 2004-2008. Journal of J Occup Environ Med 51:822- 837.

2. Salas-Nicas S (2020) Job insecurity, economic hardship, and sleep problems in a national sample of salaried workers in Spain. Sleep Health 6: 262-269.

3. Sibley CG (2020) Effects of the COVID-19 pandemic and nationwide lockdown on trust, attitudes toward government, and well-being. Am Psychol 75: 618-630.

4. Wang C (2020) Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. Int J Environ Res Public Health17:17-29.

5. Bick A (2020) Work from home after the COVID-19 Outbreak. Federal Reserve Bank of Dallas, Research Department.

6. Burr H (2019) The third version of the Copenhagen psychosocial questionnaire. Safety and health at work 10: 482-503.

7. Rodríguez-Rey RH, Garrido-Hernansaiz S, Collado S (2020) Psychological impact and associated factors during the initial stage of the coronavirus (COVID-19) pandemic among the general population in Spain. Frontiers in psychology 1540.

8. Brooks SK (2020) The psychological impact of quarantine and how to reduce it: rapid review of the evidence. The lancet 395: 912-920.

9. Kniffin KM (2021) COVID-19 and the workplace: Implications, issues, and insights for future research and action. Am Psychol 76: 63-77.

10. Organization WH (2020) COVID 19 Public Health Emergency of International Concern (PHEIC). Global research and innovation forum: towards a research roadmap.