

Impact of Fluorosis on Quality of Life: Systematic Review

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ABSTRACT

Introduction: Fluorosis is known to have an effect on dental aesthetics but its effects on the quality of life are not well documented.

Methods: An electronic search was conducted on PubMed and Cochrane databases between 2015 and 2019 to establish how many epidemiological studies reported on the effects of fluorosis on quality of life.

Results: Eight studies were found to be relevant; one reported the dental effects caused by fluorosis, but the other seven did not support the findings that psychological effects are caused by this condition.

Conclusion: Extremely few studies established the effects of fluorosis on the general quality of life. Social well-being more than emotional well-being was shown to be affected by moderate to severe fluorosis.

Keywords: Dental fluorosis, Quality of life

INTRODUCTION

Fluoride is known to reduce dental caries [1-4]. However, when it is taken in excess it causes fluorosis especially from water sources as well as toothpastes. Dental fluorosis is an irreversible enamel defect, [5] which ranges from mild white spots of hypo mineralization, which are barely visible, to enamel defects which appear as brownish yellow pits of hypoplasia [6].

Fluorosis had a negative impact on the quality of life as shown in a cross-sectional study conducted in areas with high fluoride concentrations in water [5]. Moreover, it appears to have an effect on the intelligence quotient of children. This may be due to the un-aesthetic effects that cause psychological disorders such as depression and hence poor performance in studies. This however has not been well established. It is for this reason that this systematic review will analyze various studies to establish the effects of fluorosis on quality of life.

Worldwide, epidemiological studies have shown that dental fluorosis is an acute, chronic and endemic problem. For instance, in Tanzania and Mexico it was found that severe fluorosis categories had a negative impact on oral health-related quality of life [5]. Particularly, emotional well-being more than social well-being as demonstrated in a cross-sectional survey of 338 children between the ages of 6 to 14 years in a school-setting [7]. This however does not agree with a cross-sectional study of 1342, 11-13 years old children conducted in India who demonstrated that their emotional well-being was not affected as much as their social well-being

[8,9]. A randomized controlled trial conducted in Brazil on 70 volunteers with fluorosis treated with two main methods (micro-abrasion and bleaching), the most significant finding was that they had lower scores for enjoying to food, smiling and laughing without embarrassment post-treatment [10].

METHODOLOGY

A systematic review was conducted using various epidemiological studies obtained from PubMed and Cochrane databases. The studies were limited to those conducted between 2015 and 2019, in English and with fully accessible free-text. **Figure 1** summarizes the findings.

RESULTS

Eight publications; one randomized controlled trial, three cross-sectional studies and four systematic reviews were found to be most relevant. However, few mentioned the detrimental effects of fluorosis on the quality of life.

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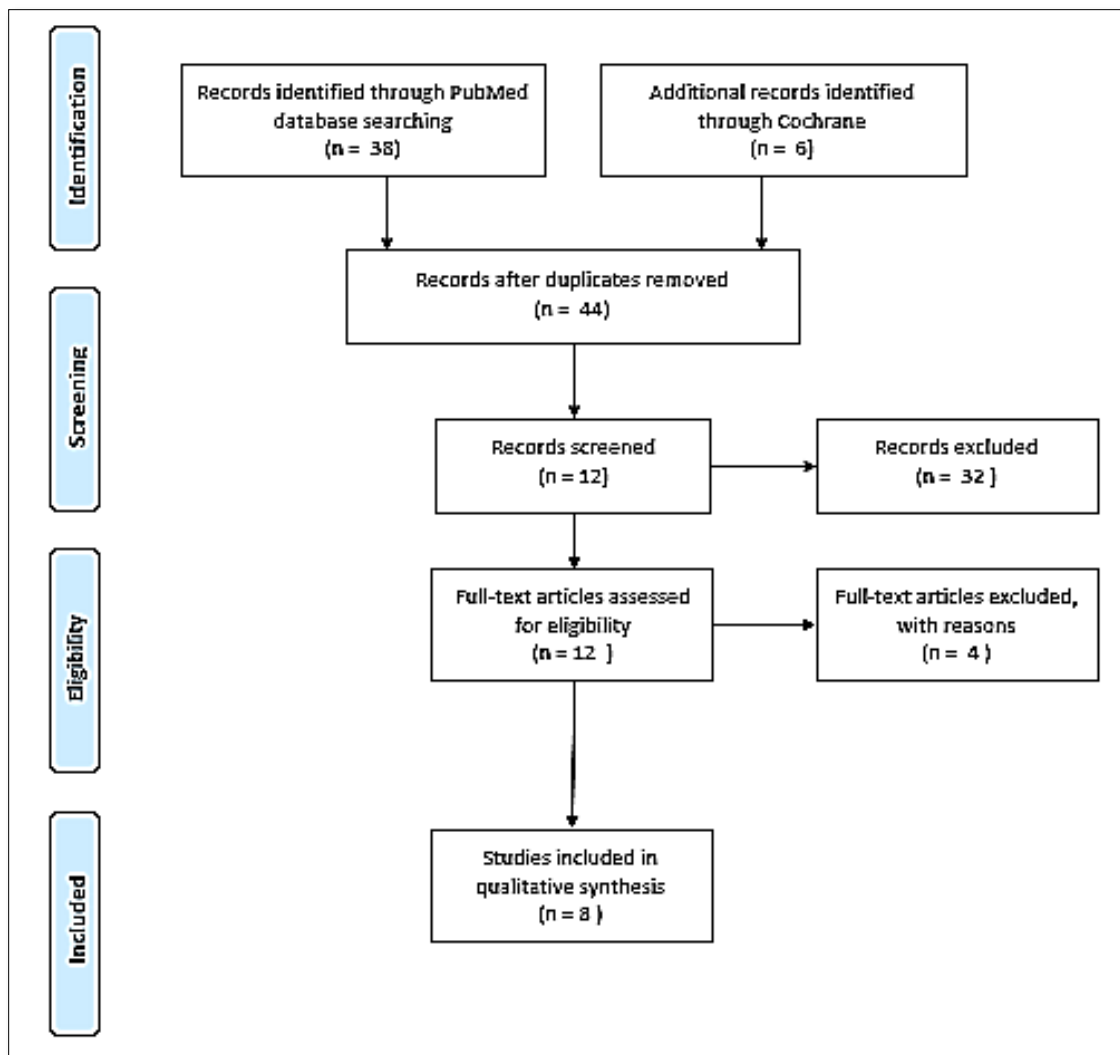


Figure 1. Review conducted using different databases.

DISCUSSION

Literature indicates that the social well-being of an individual is affected by severe to moderate fluorosis [8-10] and health and the quality of life of an individual. However, given the limited literature on the effects of fluorosis on quality of life the most serious effects of fluorosis are reported when it is severe with the brownish yellow pits, as reported in Tanzania and Mexico [5].

CONCLUSION

This systematic review has demonstrated that there are few epidemiological studies being conducted on the effects of fluorosis on the quality of life. Severe fluorosis causes social more than emotional effects on the well-being of an individual.

DISCLAIMER

None.

CONFLICT OF INTERESTS

None.

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REFERENCES

1. Iheozor-Ejiofor Z, Worthington HV, Walsh T, O'Malley L, Clarkson JE, et al. (2015) Water fluoridation for the prevention of dental caries. Cochrane Database of Syst Rev 18.
2. Marinho VCC, Higgins J, Logan S, Sheiham A (2003) Fluoride toothpastes for preventing dental caries in children and adolescents. Cochrane Database Syst Rev 2003: CD002278.
3. Walsh T, Worthington HV, Glenny AM, Marinho VCC, Jeroncic A (2019) Fluoride toothpastes of different

concentrations for preventing dental caries. Cochrane Database Syst Rev 3: CD007868.

4. Rango T, Vengosh A, Jeuland M, Whitford GM, Tekle-Haimanot R (2017) Biomarkers of chronic fluoride exposure in groundwater in a highly exposed population. *Sci Total Environ* 15: 596-597.
5. García-Pérez Á, Irigoyen-Camacho ME, Borges-Yáñez SA, Zepeda-Zepeda MA, Bolona-Gallardo I, et al. (2017) Impact of caries and dental fluorosis on oral health-related quality of life: A cross-sectional study in school children receiving water naturally fluoridated at above-optimal levels. *Clin Oral Investig* 21: 2771-2780.
6. Chestnutt IG (2016) Dental public health at a glance. John Wiley & Sons.
7. Díaz S, Vélez MP, Martínez LM, Ramos K, Boneckér M (2018) Parental perceptions of impact of oral disorders on Colombian schoolchildren's oral health related quality of life. *Acta Odontol Latinoam* 31: 23-31.
8. Kumar S, Kroon J, Laloo R, Johnson NW (2016) Validity and reliability of short forms of parental-caregiver perception and family impact scale in a Telugu speaking population of India. *Health Qual Life Outcomes* 1: 14-34.
9. Kumar S, Kroon J, Laloo R, Johnson NW (2016) Validity and reliability of short forms of parental-caregiver perception and family impact scale in a Telugu speaking population of India. *Health Qual Life Outcomes* 1: 14-34.
10. Meireles SS, Goettems ML, Castro KS, Sampaio FC, Demarco FF (2018) Dental fluorosis treatment can improve the individuals' OHRQoL? Results from a randomized clinical trial. *Braz Dent J* 29: 109-116.