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Research Article

**THE PROBLEMS OF DENTAL FLUOROSIS AMONG
SCHOOL CHILDREN AND TO FIND OUT THE FACTORS
ASSOCIATED WITH DENTAL FLUOROSIS****Dr. Anoosh Alishbah, Dr. Sana Zaib, Dr. Rimsha Batool**
Dental Section, Faisalabad Medical University Faisalabad**Article Received:** March 2020**Accepted:** April 2020**Published:** May 2020**Abstract:**

Background: Fluorosis, caused through ingestion of extreme amounts of fluoride in food or water, is an important general medical issue in Pakistan. The current research remained aimed to measure problems of dental fluorosis amongst school children in addition to find out the issues related through dental fluorosis in Faisalabad, Pakistan.

Methods: Our current research was conducted at Allied Hospital Faisalabad from February 2017 to January 2018. The entire 1036 secondary school youth (13-18 years) remained recruited from dissimilar schools selected using a stratified examination strategy. The dental assessment was completed to record the dean's record on fluorosis, and socio-statistical information, food utilization and oral cleanliness was recorded using a pre-tested and organized survey. Fluoride content remained estimated using an Orion device, and the Community Fluorosis Index (CFI) was determined from analyses of drinking water from different sources. A multivariate survey with a relapse model with summary assessment of condition (SAM) was used to investigate variables related to dental fluorosis.

Result: Of the 1,037 trainees enrolled, 66.7% had dental fluorosis; over 56% had simple or modest fluorosis as measured by Dean's Fluorosis Index (DFI) and the Community Fluorosis Index. Most of the influenced students came from government schools. The variables primarily related to dental fluorosis remained living in the study area for more than six years and considering attending a government school. The strong positive relationship among measurement of fluoride content in drinking water composed in investigation and CFI was detected ($\rho = 0.572$).

Conclusion: The occurrence of dental fluorosis remained very high, distressing nearly 66% of graduate students, mostly in government schools also longstanding inhabitants of the area. The teaching of well-being and the consideration of the network for anticipating fluorosis, apart from setting up defluorination plants or preparing for locally established defluorination procedures in study cities, should be taken into account.

Keywords: Adolescents, Community Fluorosis Index, Dental fluorosis, Dean's Fluorosis Index.

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INTRODUCTION:

Fluorosis is one of extreme general medical issues in Pakistan, as only 2 thirds of the states remain prevalent to fluorine. In Pakistan, about 28 million people remain by and under the influence of fluorosis and 69 million are at danger of developing fluorosis, counting offspring as young as 18 years old [1]. Pakistan is located in geological fluoride belt, and in areas where fluoride content remains high in rocks before soil, fluoride drainage occurs, resulting in an abundance of fluoride in groundwater [2]. In any case, degree of fluoride in the water likewise rest on the normal solvency, the proximity of different minerals, corrosiveness of soil and the measurement of the water existing, which clarifies high fluoride content in groundwater. Drinking water is main dietary source of fluorides. In addition, fluoride may also be available in food, e.g. saltwater fish, sorghum, mulleins and crops grown in soils flooded by water containing high fluoride centralization [3]. However, fluoride is a fundamental component for the advancement of bones and teeth because it structures hydroxyapatite with the calcium present in it and about 96% of fluoride is found in the calcified tissues of the human body, and the ideal level of fluoride in the diet prevents dental caries, yet exposure to a high level of fluoride for a delayed period of time results in a fluorosis, skeletal fluorosis, and decreased IQ [4]. Faisalabad is one of fluorine-endemic states in Pakistan and 15 localities, including the Kolar region, situated in eastern and southeastern belt of Faisalabad, apparently have high levels of fluoride in groundwater. In any case, limited examinations were carried out on the burden of dental fluorosis in these localities in Faisalabad. Thus, a cross-sectional school survey was undertaken to measure the occurrence in addition sternness of dental fluorosis

and to discovery out variables related to dental fluorosis amongst school children [5].

METHODOLOGY:

Our current research was conducted at Allied Hospital Faisalabad from February 2017 to January 2018. A total of 1036 secondary school youth (13-18 years) were recruited from different schools selected using a stratified examination strategy. The size of the test was determined using a predominance of 33.8 per cent and a total accuracy of 6 per cent. The impact of the configuration of 3 was taken into account to land at an example extent of 1048. The overall of 60 schools stayed located in test area, of which 4 remained schools for young males or young females. Subsequently, 56 schools were considered for the examination (urban area 14; country area - 42). According to the group examination system and the corresponding portion strategy, five schools in the province and one school in the urban region were selected by the irregular inspection technique and lottery strategy. All young secondary school students who had occupied the area since birth were selected for the examination.

Inspection System

The inspection of the stratified clusters ended with the rustic and urban setting and the extent of the subdivision was to acquire the essential number of schools. Selected schools were stayed and classes remained arbitrarily designated, altogether understudies in the class were checkered; the survey followed the consent of the tutors/guardians, and the assessment was made during the accompanying visit. The essential inclusion criteria for enrolment in the studies were under students in the age group 13-18 years, not suffering from any basic disease.

Table 1 Socio demographic features of research population (n = 1034)

Variables	Category	Frequency (%)
Age group	12–14 years	463 (45.1)
Age (in years)	Mean (SD)	14.7(1.01)
Gender	Female	517 (50.4)
	Male	509 (49.6)
Monthly family Income	Rs. 5000–10000	488 (47.6)
	Less than Rs. 5000	434 (42.3)
Type of school	Aided	253 (24.7)
	Government	773 (75.3)
	Mixed	969 (94.0)
Finger millet Consumption	Diet Vegetarian	57 (5.6)
	No	40 (3.9)
	Yes	986 (96.1)

Assortment of information

A modified, self-monitored and pre-tested survey of the WHO Oral Welfare Assessment Framework was guided and used in survey. The survey was alienated into two sections: the first included salient socio-demographic facts, school types and long periods of residence; the second section focused mainly on particular subtleties, for example, assistance in maintaining oral cleanliness, the usage of fluoridated and non-fluoridated toothpaste, the subtleties of the drinking water source, the use of millet, tea, and their recurrence on admission.

Review of Information

The study information was entered twice in Epidote 4.2 and the measurable review was done in Adaptation 23 of the SPSS (IBM Corp, New York). A chi-square test was performed to investigate the relationship between the level of fluoride in water and confounding factors, e.g. fluoridated toothpaste, use of millet and tea. The Karl Pearson test was conducted to quantify the relationship between the fluoride in drinking water and CFI.

RESULTS:

A total of 1034 immature understudies between the ages of 19 and 17 were selected for the examination.

The Lions understudy share was 16-18 year old (55.6%), followed by 13-15 year old (42.1%) in the age collection. The examination population included nearly half of the female students (51.5%), and two-thirds of the full survey population was concentrated in public schools (76.4%). A significant number of members were perpetual occupants of the city in question, residing in a similar city since birth or for more than 10 years (97.5%). The proportion of Lion understudies had a mixed eating routine (94.5%) and a propensity to use tea (87%). Common millet remained one of main staple foods (97%), as shown in Table 1. Figure 1 shows the pervasiveness also sternness of dental fluorosis characterized by DFI; moderate fluorosis was most often revealed as dental fluorosis in limbs. Table 2 displays that dental fluorosis was common to more than 72% of the students living in Beglihosahalli, Muduvadi and Kurugal. In the other three cities studied, 38.4-43.7% of students reported dental fluorosis. The average fluoride content of water tested in five of the six cities was above 1.3 gm/L, except for 1 hour anywhere this was 0.86 gm/L. The Network Fluoride Record (NFR) was also determined to measure endemicity of fluorosis in city in question in addition to determine the applicable general welfare level.

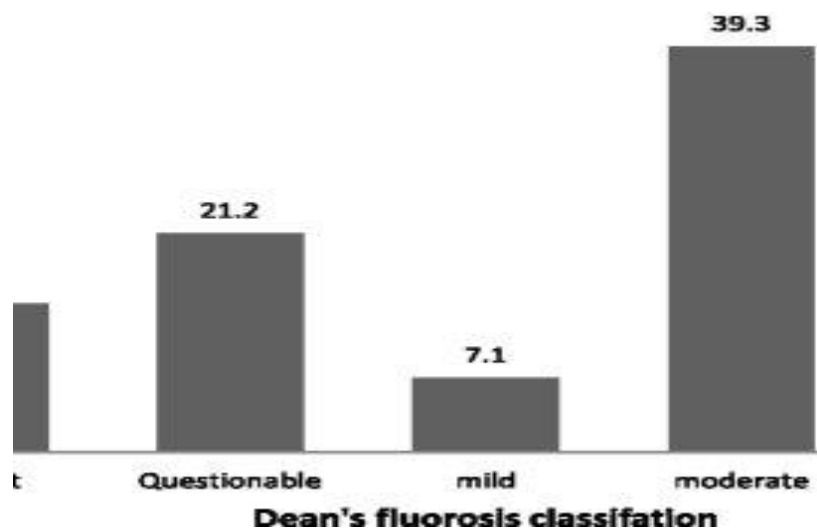


Fig. 1 Dental fluorosis occurrence and harshness amongst school going adolescents classified rendering to Dean's Fluorosis index:

Village	Total Population ^a	Presence of fluorosis n (%)	Total students n (%)	Mean fluoride level in water (mg/l)	Community fluorosis index	Public health significance
Beglihosahalli	1292	214 (73.0)	293	2	2.8	Marked
Muduvadi	1449	157 (74.1)	212	1.6	2.12	Marked
Holur	2706	52 (49.5)	105	0.85	2.03	Marked
Sugutur	3421	31 (51.7)	60	1.4	2.3	Marked
Vokkaleri	3571	77 (39.9)	193	1.5	1.8	Medium
Kurugal	1864	131 (80.4)	163	1.2	2.59	Marked
Karl Pearson correlation coefficient						
6 villages	14303	662 (64.5)	1026	1.4 ± 0.38	2.3 ± 0.37	0.57

^aAccording to Census 2011

DISCUSSION:

Research readings were showed to assess the occurrence of dental fluorosis amongst young students in many localities in the state of Faisalabad, which is in the endemic fluoride belt in Pakistan, but this examination is one of first in the Kolar taluka [6]. Dental fluorosis is a staining of the teeth that is the most feasible marker of dental disease reflecting the intake of a higher degree of fluoride than would normally be appropriate, mainly through drinking water. Consistent presentation to fluorides can cause skeletal fluorosis and different and authentic results, e.g., adverse occurrences including death [7]. The survey provides information on the burden of fluorosis in territory and evidence for the development of strategies to direct the fluoridated substance in drinking water to an ideal level [8]. This review analyzed indicators of dental fluorosis in members. The variables primarily related to dental fluorosis had been living in the survey territory for more than 6 years and were considered in government schools [9]. Fluorosis influences the tooth during the formative stages, which is a conceivable clarification of how this happened in children living in area from birth or older than 6 years of age. Rendering to this examination, dental fluorosis is comparable in children who have devoured water from the well (64.8%) or from the tap (65.9%) [10].

CONCLUSION:

Though dental fluorosis remains a permanent condition of tooth polishing, it may be controlled if level of fluoride in the water is ideal. Routine water testing, routine drug registration camps, and a wellness awareness program would be beneficial for system residents in areas where fluoride is endemic. In addition, the review sought to bring the consideration of policy makers to the size of disorder and to implement systems, e.g. the establishment of network defluorination plants or preparation on locally established indigenous

defluorination methods with the aim that the fluoride content of drinking water at the city or network level may be improved and thus managed.

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