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Research Paper

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KEYWORDS :

Evaluating the awareness of Orthodontic treatment among school children of different socioeconomic grounds

Dr.Roopa Siddegowda

+415, Santhrupthi Nilaya, 7th Cross, Mahadeshwara Extension, Mysore-570016. Karnataka

Introduction:

To attain a level of health, that enables people to lead a socially and economically productive life, is the social target of World Health Organization. Health is multi-factorial and multi-dimensional influenced by factors such as genetics, lifestyle, environment, socio-economic status and many others.[1] Health has improved significantly over the last century, but this improvement, has not been experienced equally across the population, being considerably greater among the better off. Oral health knowledge and awareness are considered to be an essential prerequisite for health-related behavior.2Awareness is the state or ability to perceive, to feel or to be conscious. Awareness forms the basis for planning oral health which is inseparable from general health. School children are considered to be an important target group to provide proper guidance for maintaining oral health and awareness about the concerned treatment.3,4,5,6 Proper education of growing children is the need of the hour. These educated children in turn take home the message about oral health, mal-alignment of teeth, consequences of the malocclusion and their treatment.

Very few studies have been done in the past to investigate the relation between SES and dental health awareness but orthodontic treatment awareness, among the school children of different SES backgrounds has not been conducted.7 The paucity of data has become the rationale of this study.

Objective of the study:

To evaluate the awareness of Orthodontic treatment among school children of different socioeconomic grounds in Karnataka state.

Methodology:

A cross-sectional epidemiological survey was conducted in the State of Karnataka, with prior permission from the Ministry of Higher Primary and Secondary Education Board of Karnataka. The survey was carried out in selected schools in all the district head quarters. Children in the age group of 10-16 years were included in the study and constituted the study population. Population proportionate technique was employed for sample size estimation. According to the population census 2011, the total population in Karnataka is 6,11,30,704, out of which 10-16 years old children constitute 29% (According to National Family Health Survey-2, India [1998-99], child population in the age group of 10-16 years was taken as a reference). With 95% confidence level, the estimated sample size was 9505. In the first stage of sampling, three categories of schools, namely, Government schools, Aided schools, and Private schools in each district were selected from a list of schools provided by the Karnataka Higher Primary and Secondary Education Board by lottery method. In the second stage, 102 schools all over Karnataka were surveyed during the year 2011-2012. All children in the age group of 10-16 years, from the selected schools in each district all over Karnataka and children who obtained written informed consent from parents to participate in the study were included. Exclusion criteria used were- history of previous orthodontic treatment, rampant caries, multiple missing teeth, mutilated malocclusion and other craniofacial anomalies like cleft lip and palate, facial hemiatropy, cleidocranial dysplasia etc.

Ethical clearance to conduct the survey was obtained from the Vokkaligara Sangha Dental College and Hospital Review and Ethical Committee. Prior permission to conduct the survey was taken from the concerned school authorities.

A pre-structured questionnaire consisting of 15 questions with multiple answers were administered to the children after the clinical examination to assess Knowledge and attitude [awareness] of the children towards Orthodontic treatment. The response of the children to the questions was recorded on a 3 point Likert scale. [a. yes, b. no, c. don't know].

Table 1: Gender and School type distribution of the sample

Gender	Sample
Male	4966
Female	4539
Total	9505

School Type	Sample
Government	3139
Aided	3238
Private	3128

Table 2: Questionnaire to record Awareness of children towards orthodontic treatment

Awareness about Dentist/ Orthodontist	1. Are you aware of a dentist? 2. Have you visited a dentist before? 3. Have you heard of an Orthodontist? 4. Are you aware that they align your teeth?	a. Yes, b. No, c. Don't know
Knowledge about irregular teeth	5. Have you noticed people having irregular teeth? 6. Do you believe teeth should be properly aligned for a better facial appearance? 7. Do you know crooked teeth have ill effects? 11. Are you aware that few teeth may have to be removed for aligning irregular teeth? 12. Does thumb-sucking has an effect on the front teeth alignment?	a. Yes, b. No, c. Don't know
Knowledge about orthodontic treatment	13. Did you know taking braces treatment at the earlier age would improve facial appearance? 14. Do you know the duration for braces treatment is longer than other dental procedures? 15. Do you know the orthodontic treatment is costly?	a. Yes, b. No, c. Don't know
Awareness about braces/ Orthodontic treatment	8. Have you seen people wearing braces? 9. Have you ever felt the need to wear braces? 10. Has anyone advised you to get your teeth aligned?	a. Yes, b. No, c. Don't know

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Results:

School types	Awareness of orthodontic treatment									
	Awareness of Dentist/ Orthodontist		Knowledge about Irregular teeth		Knowledge about Ortho treatment		Awareness of Braces treatment		Total	
	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D
Government	2.21[a]	1.07	3.05[a]	1.51	1.15[a]	1.15	1.63[b]	0.93	8.05	3.23
Aided	2.28[b]	1.05	3.22[b]	1.27	1.27[b]	0.99	1.70[c]	0.87	8.46	3.01
Private	2.26[ab]	1.05	3.09[a]	1.38	1.22[ab]	1.03	1.57[a]	0.87	8.13	2.85
Total	2.25	1.06	3.12	1.38	1.21	1.06	1.64	0.90	8.22	2.97
F value	3.553		12.675		10.135		16.022		17.663	
P value	.029		.000 (HS)		.000 (HS)		.000 (HS)		.000 (HS)	

*Note: F-Fisher's Value; P-Probability; HS-Highly significant; dfs= 2, 9502. Means with different superscripts are significantly different from each other as indicated by Scheffe's Post hoc test (Alpha=.05).

Awareness of Dentist/ Orthodontist
One-way ANOVA reveals' a significant difference among the mean scores of awareness about Dentist and Orthodontist among the children included in the study. F value of 3.553 was found not to be significant at .029 levels. Scheffe's post hoc-test indicates that the children from Aided schools (2.21) have the highest awareness and children from Government schools have the lowest awareness. Mean awareness of the children in Private school was moderate. Government schools have lesser health education programs being conducted since they are dependent on governmental organizations which might be one of the reasons. Private schools have a health program once in a year or so hence children are aware.

Knowledge about Irregular teeth
One-way ANOVA reveals' a significant difference among the mean scores of knowledge about irregular teeth among the children in the study. F value of 12.675 was found to be significant at .000 levels. Scheffe's post hoc-test indicates that the children from Aided schools (3.22) have the highest awareness, children from Government schools and Private schools have the lowest awareness. Children from government schools consider irregular teeth as normal and would have been adjusted to live with the irregularity. Private school children hardly observe the irregularity as they would have opted for treatment if so.

Knowledge about Orthodontic treatment
One-way ANOVA reveals' a significant difference among the mean scores of knowledge about orthodontic treatment among the children included in the study. F value of 10.135 was found to be significant at .000 levels. Scheffe's post hoc-test indicates that the children from Aided schools (1.27) exhibited highest awareness. Children from Government schools have the lowest awareness. Mean awareness of the children in Private school was moderate. Children undergoing orthodontic treatment are lesser in Government schools as it would be mainly dependent on the lack of affordability due to poor socio-economic status.

Awareness of braces treatment
One-way ANOVA reveals' a significant difference among the mean scores of awareness of braces treatment among the children included in the study. F value of 16.022 was found to be significant at .000 levels. Scheffe's post hoc-test indicates that the children from Aided schools (2.21) have the highest awareness, lowest awareness in children from Private schools and moderate awareness in children from Government schools.

Discussion:
In general, the children studying in Government schools are said to have lower awareness levels than those in private/aided schools. This difference can be attributed to the lower socio-economic background of the children of Government, schools as identified by Wright2 Chen3 and Hamilton and Coulby4. In our study, awareness about Dentist and Orthodontist among the children from Aided schools had the highest awareness, lowest awareness from Government schools and moderate awareness in Private school. The awareness of braces treatment was average in the children of most of the districts. The socio-economic situation plays a major role as the parents' financial situation determines the need for treatment of malocclusion and at times irregularity of teeth is also not considered abnormal.

Through this survey, we have recorded the awareness levels of among school children of different socioeconomic grounds in Karnataka state. Our primary concern is to educate the children as they are considered to be an important target group to provide proper guidance for maintaining oral health. These educated children can in turn take home the message about oral health, mal-alignment of teeth, consequences of the mal-occlusion and their treatment. The outcome of the survey will be useful to the Community, Dental professionals and to NGO's to provide treatment to the needs and to further increase the awareness about orthodontic treatment in the school going children of Karnataka state.

Although imparting oral health education begins from the footstep of awareness, evaluation of its implementation is an important indicator of the success of the education imparted. Also the Government should facilitate for improving the oral health programs and orthodontic awareness in children of Government schools.

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