World Journal of Medicine and Medical Science
Vol. 2, No. 1, January 2014, PP: 01 - 06, ISSN: 2330-1341 (Online)
Available online at http://www.wjmms.com

Research article

An Epidemiological Survey on Awareness of Orthodontic treatment in school children from four divisions of Karnataka State, India

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Abstract

Aims: To evaluate the awareness of Orthodontic treatment among school children from four zones in Karnataka state.

Settings and Design: School settings and Descriptive cross-sectional survey

Methods and Material: A cross-sectional epidemiological survey was conducted in all the 30 districts of Karnataka. School children in the age group of 10-16 years were the target population. Population proportionate technique was employed for the sample size estimation. A total sample of 9505 was randomly selected from 102 schools all over Karnataka. A pre-structured questionnaire is used to record the awareness of children towards orthodontic treatment.

Statistical analysis used: Descriptive statistics, Cross-tabulation.

Results and Conclusion: School children from Mysore division had good awareness about Orthodontic treatment followed by Bangalore division, Gulbarga division and Belgaum division.

Keywords: Awareness, School children, Orthodontic treatment, Karnataka

Introduction

Karnataka is a vast state in South India constituting 30 districts. The state covers an area of 191,976 square kilometres (74,122 sq mi), or 5.83% of the total geographical area of India. Karnataka is divided into 30 districts and 4 administrative divisions.

Awareness is the state or ability to perceive, to feel or to be conscious. Awareness forms the basis for planning oral health which is inseparable part of general health. Oral health knowledge and awareness are considered to be an essential pre-requisite for health-related behavior.[1] Malocclusion is now the raising public issue to enhance facial appearance and improve psychosocial status. Awareness of malocclusion and the need to make corrections has increasingly become prevalent among our population. As growing public interest in oral health increased, the demand for orthodontic treatment also became more noticeable in dental practices. This survey is formulated to investigate the same and to create awareness of orthodontic treatment among the school children as the target population. There are no reported studies in literature to assess the awareness of Orthodontic treatment from four divisions of Karnataka State. In this context, the need for the study is to record the awareness of orthodontic treatment.

Bangalore Division	**Belgaum Division**	**Gulbarga Division**	**Mysore Division**
Bangalore Urban	Bagalkot	Bellary	Chamarajanagar
Bangalore Rural	Belgaum	Bidar	Chikamagalur
Chikkaballapur	Bijapur	Gulbarga	Dakshina Kannada
Chitradurga	Dharwad	Koppal	Hassan
Davanagere	Gadag	Raichur	Kodagu
Kolar	Haveri	Yadgir	Mandya
Ramanagara	Uttara Kannada		Mysore
Shimoga			Udupi
Tumkur			

Objective of the study

To assess the awareness of orthodontic treatment in school children from four divisions of Karnataka State, India.

Materials and Method

With a prior permission from the Ministry of Higher Primary and Secondary Education Board of Karnataka, India, a survey was planned in the schools. 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 was 61130704 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 each district, schools were selected from a list of schools provided by the Karnataka Higher Primary and Secondary Education Board by lottery method. A total of 102 schools all over Karnataka were surveyed during the year 2012-2013. A total sample of 9505 children in the age group of 10-16 years was selected from the randomized schools in each district all over Karnataka. 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 self-administered questionnaire consisting of 15 questions with multiple answers were given to the children after the clinical examination to assess their knowledge and attitude [awareness] towards Orthodontic treatment. The responses of the children to the questions were recorded on a 3 point Likert scale [a. yes, b. no, c. don't know]. An oral health lecture was given to all the children in the school to create awareness about Dental health and Orthodontic treatment.

Statistical analysis

Data were coded and entered into excel sheet. To maintain the data quality (validity) rechecking and cross checking were done during data entry phase. Later, data were transformed into SPSS windows version 16, where coding, recording, crosschecking, processing and analysis of data were done. Simple descriptive statistics were used to describe the study variables.

Results and Discussion

Table 1: Gender distribution of the sample

Gender	No of children
Male	4966
Female	4539
Total	9505

Table 2: Questionnaire format to analyze the 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 an 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 that 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**

Table 3: Cross-tabulation of awareness of orthodontic treatment with the four divisions of Karnataka

			AWARENESS				Total
			No awareness	Poor awareness	Moderate awareness	Good awareness	
DIVISION	Bangalore	Count	248	1204	1110	704	3266
		% of Division	7.6%	36.9%	34.0%	21.6%	100.0%
	Belgaum	Count	225	902	683	380	2190
		% of Division	10.3%	41.2%	31.2%	17.4%	100.0%
	Gulbarga	Count	229	822	650	370	2071
		% of Division	11.1%	39.7%	31.4%	17.9%	100.0%

	Mysore	**Count**	134	756	641	447	1978
		% of Division	6.8%	38.2%	32.4%	22.6%	100.0%
Total		**Count**	**836**	**3684**	**3084**	**1901**	**9505**
		% of Division	**8.8%**	**38.8%**	**32.4%**	**20.0%**	**100.0%**

Contingency Co-efficiency=.083(.000)

Discussion

India is still a developing country where malocclusion is not given much of importance. 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. Due to the lack of knowledge about malocclusion and other influencing factors like literacy rate and socio-economic status, malocclusion cases are not given priority. The level of dental health knowledge, positive dental health attitude, and dental health behavior are interlinked and associated with the level of education and income as demonstrated by studies in the past.[2-7] Attitudes and perceptions towards dental appearance differ among populations and among individuals.[8]

According to the results of our study, there are significant differences between the awareness levels among the four divisions in Karnataka State. First of all, the Bangalore division is observed to have no awareness about Orthodontic treatment in 7.6% of the subjects, poor awareness in 36.9%, moderate awareness in 34% and good awareness in 21.6% of the subjects.

Secondly, the Belgaum division is observed to have no awareness about Orthodontic treatment in 10.3% of the subjects, poor awareness in 41.2%, moderate awareness in 31.2% and good awareness in 17.4% of the subjects. Gulbarga division subjects had no awareness about Orthodontic treatment in 11.1%, poor awareness in 39.7%, moderate awareness in 31.4% and good awareness in 17.9%. Mysore division subjects is observed to have no awareness about Orthodontic treatment in 6.8%, poor awareness in 38.2%, moderate awareness in 32.4% and good awareness in 22.6%.

To sum up, 8.8% of the total subjects had no awareness about Orthodontic treatment, 38.8% had poor awareness, 32.4% had moderate awareness and 20% had good awareness.

The school children are the important target group who are easily accessible to provide proper guidance for maintaining oral health and awareness about the concerned treatment.[9-12] 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.

Conclusion

8.8% of the total subjects had no awareness about Orthodontic treatment, 38.8% had poor awareness, 32.4% had moderate awareness and 20% had good awareness. School children from Mysore division had good awareness about Orthodontic treatment followed by Bangalore division, Gulbarga division and Belgaum division.

Acknowledgement

We thank all the school authorities and the children for their cooperation.

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