

ORIGINAL ARTICLE

Comparison of Oral Health Knowledge and Attitude among Immigrant Tibetan and Indian Pre-school Teachers/Caretakers in Bylakuppe

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ABSTRACT

Introduction: Early childhood caries is a multi-factorial disease occurring during childhood with socio-cultural and socio-economic determinants. School teachers play an important role in influencing children to adopt healthy oral lifestyles, and they also have a great role in imparting awareness about the etiology and prevention of common oral ailments. **Objectives:** To evaluate and compare oral health attitude and oral health knowledge of local Indian and immigrant Tibetan pre-school caretakers and teachers. **Materials and Methods:** Cross-sectional and self-administered questionnaire study was conducted by including a total of 62 Indian and 9 Tibetan pre-schools were there in Bylakuppe with 124 Indian and 36 immigrant Tibetan pre-school teachers/caretakers. Questionnaire in Kannada language was distributed among pre-school teachers and was collected back on the same day and ensured 100% response. Tibetan pre-schools were visited for distributing the Tibetan questionnaire. Questionnaire in Tibetan language was distributed and was collected back on the same day and ensured 100% response. Descriptive statistics were computed. The comparison was made using Chi-square test. **Results:** A significant difference in attitude and knowledge levels was present between immigrant Tibetan and the local Indian teachers/caretakers. **Conclusion:** The assessment of oral health knowledge among the caretakers and pre-school teachers showed that they were ill informed and lacked knowledge. On comparison, this cross-sectional study showed that Indians have a slightly better knowledge than Tibetans.

Key words: Early childhood caries, Milk teeth, Child, Healthy oral life style

INTRODUCTION

Untreated early childhood caries (ECC) and its complications are associated with negative health outcomes. These include, poor nutrition due to poor feeding and eating, increased irritability due to pain and discomfort, reduced weight gain, delayed cognitive development and poor quality of life.^[1-5] Furthermore, invasive treatment for caries in pre-school children may bring hardship for the child and family.

Internationally, the prevalence of ECC has been reported to be in a range from 6% to 90% with most developed countries in the lower end and most developing countries in the middle to higher end of this range.^[6] Globally, schools reach over 1 billion children and serve as a valuable platform for oral health promotion of children. The pre-school age is the most influential period of a child's life and it is this period during which the children develop beliefs, skills and attitudes which they are going to practice throughout their lives. Hence, schools strongly influence children's growth and welfare.

Oral health promotion and education can be delivered as well as reinforced throughout the school period. Children spend substantial period of their life at school in close proximity with their schoolteachers/caretakers. Hence, it is easier for caretakers/teachers to influence their hygiene practices and diet, as they are at a developing stage.

School teachers can play a vital role in convincing children to adopt healthy oral lifestyles as well as disseminating knowledge about the etiology and prevention of common oral ailments.^[7] This can be a reality if schoolteachers themselves have a thorough and in-depth knowledge about common oral diseases and their modes of prevention and practice healthy oral hygiene and lifestyle. Stipulation of oral health knowledge to the children by their teachers at the pre-school level can prove to be more effective compared to the primary or secondary level because at pre-school level children begin to learn the basic oral hygiene practices, and they are most prone to dental caries.^[7] Oral health attitude and knowledge of the caretakers and teachers in a particular population are vital to understand the social values and

practices ascribed to the effective implementation of prevention strategies and protocols, to improve the oral health, and the quality of life for the very young.^[8]

The change to healthy practice and attitude can be obtained by providing adequate information and motivation to the subjects. To create such health education, the assessment of knowledge and attitude is essential.^[9] Incursion of Tibet by China in 1950 led to an exodus of almost 120,000 Tibetans; who have immigrated and settled in small dissimilar communities in different parts of India.

These immigrant Tibetans continue to practice their traditional beliefs, lifestyles, dietary habits, and customs - with only insignificant changes made to suit the local environment. An immigrant Tibetan settlement is present in Bylakuppe of Mysore district, Karnataka; which is equipped with hospitals, both allopathic and traditional Tibetan clinics; dental clinic and schools. A marked difference in culture, tradition, beliefs lifestyle, and practices is visible between the immigrant Tibetan population in Bylakuppe and the local Indian population. Hence, this study is being carried out with an initiative to assess the level of oral health knowledge and oral health attitude of local Indian and immigrant Tibetan pre-school teachers/caretakers in Bylakuppe.

Objectives

- To assess the oral health knowledge of local Indian pre-school teachers and caretakers
- To assess the oral health knowledge of immigrant Tibetan pre-school teachers and caretakers
- To compare the oral health attitude and knowledge of the immigrant Tibetan with local Indian pre-school caretakers and teachers.

MATERIALS AND METHODS

A cross-sectional, self-administered questionnaire survey aimed at assessing the oral health attitude and oral health knowledge of both Indian and Tibetan care takers and teachers of Bylakuppe was undertaken. Ethical clearance was obtained from the IRB of Coorg Institute of Dental Sciences, Virajpet. Prior permission was taken from Representative of Department of Home, Central Tibetan Administration of his Holiness the Dalai Lama, and Tibetan Government in Exile, Dharamsala. A consent was taken from all the pre-school teachers and caretakers.

Sampling Method

List of pre-schools of Bylakuppe were obtained from Child Development Project (CDP) Office Periyapatana. A total of 62 Indian and 9 Tibetan pre-schools were there in Bylakuppe with 124 Indian and 36 Tibetan pre-school teachers/caretakers. All of them were considered in the study.

Methodology

Data collection was done using a self-administered questionnaire. Initially, an English questionnaire was made, which was then translated into Kannada and Tibetan. It was then back translated into English version to ensure comprehensibility and validation. The questionnaire reliability was tested in a pilot study. In pilot study, 16 pre-school teachers/caretakers were included, and these teachers/caretakers were excluded from the main study. To assess reliability and Internal validity of the questions, similar questions were grouped and Cronbach's alpha was calculated and it was found to be acceptable (0.74). Questionnaire had three parts: In the first part, the personal information regarding the subject was obtained like age, sex, and marital and educational status. The second part of questionnaire included 15 questions related to knowledge of pre-school teachers/caretakers about oral health. The third part of questionnaire included 9 questions regarding the attitude of pre-school teachers/caretakers on oral health.

On prefixed dates, CDP Office was visited and permission was obtained, where the Indian pre-school teachers/caretakers gathered for the monthly meetings. The purpose of this study was explained, and informed consent was taken from Indian teachers and caretakers.

Questionnaire which was in Kannada language was distributed among pre-school teachers/caretakers and was collected back on the same day and ensured 100% response. Tibetan pre-schools were visited for distributing the Tibetan questionnaire. The study purpose was explained to the groups and informed consent was taken from them. Questionnaire which was in Tibetan language was distributed and was collected back on the same day and ensured 100% response.

Statistical Analysis

Descriptive statistics were computed. The comparison was made using Chi-square test. Confidence interval was set at 95% and a $P < 0.05$ was considered as significant. Analysis of data was done using SPSS version 17.

RESULTS

The demographic data about respondents is presented in Table 1. A total of 124 Indian teachers/caretakers participated in the present study and all were females; and among 36 immigrant Tibetan teachers/caretakers, only two were males. Th majority (60.4%) of Indian teachers/caretakers were married, whereas most (52.7%) of immigrant Tibetan teachers/caretakers were unmarried.

The responses of Indian and immigrant Tibetan pre-school teachers/caretakers for questions related to oral health knowledge were given in Table 2. Among immigrant Tibetan pre-school teachers/caretakers, 91.67% answered correctly for baby's first tooth eruption; 83.33% of school teacher/caretakers

know that child's regular dental visit prevent dental diseases. In response to question no. 8, it was found that 83.33% teacher/caretakers know that food with sugar and starchy/sticky food causes tooth decay.

Table 1: Distribution of study subjects

Variables	Study subjects	Frequency (n)	Percentage
Ethnicity	Tibetans	36	22.5
	Indians	124	77.5
Marital status	Married Indians	75	60.48
	Married Tibetans	17	47.2
	Unmarried Indians	49	39.51
	Unmarried Tibetans	19	52.7

But knowledge regarding oral health was poor with regard to questions such as the use of fluoride (11.11%), amount of tooth paste to be used (11.11%), age at which the child start brushing with toothpaste (27.78%). None of the Tibetan school teacher/caretakers has correctly answered for how often the baby's teeth should be cleaned (0%).

Among Indian pre-school teachers/caretakers, 83.06% answered correctly for baby's first tooth eruption; 70.16% of school teachers know that child's regular dental visit prevent dental diseases. Furthermore, 83.06% teacher/caretakers know that food with sugar and starchy/sticky food causes tooth decay.

But knowledge regarding oral health was comparatively poor with regard to questions such as the use of fluoride (45.16%),

Table 2: Oral health knowledge of Indian and immigrant Tibetan teachers and caretakers

Questions	Options	Tibetans (%)	Indians (%)	Chi-square	P value and significance
1. When does the first baby tooth appears in the child mouth?	6-9 months	33 (91.67)	103 (83.06)	1.995	0.369
	18 months	2 (05.56)	9 (07.25)		
	Don't know	1 (02.78)	12 (09.67)		
2. Age at which child have complete set of 20 milk teeth?	2-3 years	12 (33.34)	77 (62.09)	10.708	0.005*
	4-5 years	20 (55.56)	43 (34.67)		
	Don't know	4 (11.11)	4 (3.22)		
3. Is milk teeth important?	Yes	15 (41.67)	103 (83.06)	45.542	0.0001***
	No	19 (52.78)	7 (5.64)		
	Don't know	2 (5.56)	14 (11.29)		
4. Can problems with baby teeth affect child's permanent teeth?	Yes	9 (25)	52 (41.93)	3.730	0.155
	No	25 (69.44)	64 (51.61)		
	Don't know	2 (5.56)	8 (6.45)		
5. Is maternal health during pregnancy important for healthy teeth in infants?	Yes	7 (19.44)	43 (34.67)	6.277	0.043*
	No	21 (58.33)	70 (56.45)		
	Don't know	8 (22.22)	11 (8.87)		
6. What causes tooth decay?	Bacteria	10 (27.78)	21 (16.93)	23.811	0.0001***
	Poor brushing	13 (36.11)	11 (8.87)		
	Excess intake of chocolates and sweets	5 (13.88)	60 (48.38)		
	All of the above	8 (22.22)	32 (25.80)		
	Don't know	0	0		
7. Does unhealthy diet affect the teeth?	Yes	9 (25)	56 (45.16)	15.010	0.0001***
	No	25 (69.44)	42 (38.875)		
	Don't know	2 (5.56)	26 (20.96)		
8. What are the types of food that can cause tooth decay?	Food with sugar and starchy/sticky food	30 (83.33)	103 (83.06)	2.732	0.435
	Meat and fish	1 (2.78)	6 (4.83)		
	Fruits and vegetables	5 (13.89)	10 (8.06)		
	Don't know	0	5 (4.03)		
9. When should we start cleaning the baby's teeth?	Once the first baby tooth appears in the mouth	6 (16.67)	92 (74.19)	43.616	0.0001***
	1 year of age	3 (8.33)	8 (6.45)		
	1½ years of age	1 (2.78)	0		
	Once the baby start walking	0	0		
	Don't know	26 (72.22)	24 (19.35)		

(Contd)...

Table 2: (Continued)

Questions	Options	Tibetans (%)	Indians (%)	Chi-square	P value and significance
10. How often should the baby's teeth be cleaned?	Baby teeth need not be brushed as frequently as adults	0	0	31.086	0.0001***
	Once a day	26 (72.22)	30 (24.19)		
	Twice a day	10 (27.78)	59 (47.58)		
	After each meal or snack	0	13 (10.48)		
	Don't know	0	22 (17.74)		
11. At what age should a child start using toothpaste?	Once the first tooth appears in the mouth	10 (27.78)	5 (4.03)	39.136	0.0001***
	After all baby teeth have erupted	5 (13.89)	43 (34.67)		
	After 2 years of age or whenever the child can spit	0	40 (32.25)		
	Don't know	21 (58.33)	36 (29.03)		
12. What is the amount of tooth paste to be used for brushing a child's teeth?	A grain of salt	0	15 (12.09)	25.852	0.0001***
	A small pea	4 (11.11)	43 (34.67)		
	A strip as big as head of tooth brush	23 (63.89)	27 (21.77)		
	Don't know	9 (25)	39 (31.45)		
13. Does fluoride play an important role in preventing tooth decay?	True	4 (11.11)	56 (45.16)	61.807	0.0001***
	False	25 (69.44)	10 (8.06)		
	Don't know	7 (19.44)	58 (46.77)		
14. Is it necessary to fill cavities in baby's teeth?	Yes	16 (44.44)	55 (44.35)	0.281	0.869
	No	17 (47.22)	55 (44.35)		
	Don't know	3 (8.33)	14 (11.26)		
15. Can the child's regular dental visit prevent dental problems?	True	30 (83.33)	87 (70.16)	2.823	0.244
	False	6 (16.67)	34 (27.41)		
	Don't know	0	3 (2.41)		

*Statistically significant, ***Highly significant

amount of tooth paste to be used (34.67%), age at which child start brushing with tooth paste (4.03%). Only 10.48% of school teacher/caretakers have correctly answered for how often the baby's teeth should be cleaned.

When responses of the Oral health knowledge based questions were compared between Tibetan and Indian pre-school teachers statistical association was found for 10 questions: Q2 - What age child will have set of complete 20 milk teeth ($P < 0.005$). Q3 - Is milk teeth important ($P < 0.0001$). Q5 - Is maternal health during the time of pregnancy important for healthy teeth in infants ($P < 0.043$). Q6 - What causes tooth decay ($P < 0.0001$). Q7 - Does unhealthy diet affect the teeth ($P < 0.0001$). Q9 - When should we start cleaning the baby's teeth ($P < 0.0001$). Q10 - How often should the baby's teeth be cleaned ($P < 0.0001$). Q11 - Age at which a child start using toothpaste ($P < 0.0001$). Q12 - What is the amount of tooth paste to be used for brushing a child's teeth ($P < 0.0001$). Q13 - Does fluoride play a key role in preventing tooth decay ($P < 0.0001$) [Table 2].

Oral health attitude of Indian and immigrant Tibetan pre-school teachers/caretakers were given in Table 3. The responses include "agree," "disagree" and "don't know." In response to question no. 18, 41.67% immigrant Tibetans and 33.06% of Indian pre-school teachers/caretakers agreed that night time

bottle or breast feeding can cause tooth decay. In response to question no. 20, 16.67% Tibetans and 35.48% Indians agreed that child's teeth have to be brushed as soon as the teeth erupt. Only 8.3% Tibetans and majority (75%) of the Indians agreed that balanced diet is essential for healthy growth of baby's teeth.

When the responses of oral health attitude based questions were compared between Tibetan and Indian pre-school teacher's statistical association was found for six questions: Q16 - Spreading of Tooth decay from mother to child while kissing or sharing utensils ($P < 0.003$). Q17 - Importance of balanced diet in healthy growth of a baby's teeth ($P < 0.0001$). Q20 - Whether to clean or brush child's teeth as soon as the teeth erupts ($P < 0.0001$). Q21 - Can ingestion of tooth paste be harmful to the child's teeth ($P < 0.0001$). Q23 - Visit for a dental check-up after teeth erupt ($P < 0.0001$). Q24 - Can prolonged use of pacifier affect the normal development of child's teeth ($P < 0.000$) [Table 3].

DISCUSSION

Oral health is an essential part of general health. Oral health attitude and oral health knowledge are necessary to maintain the good oral health. It is believed that the increased dental caries prevalence is greatly influenced by the lack of dental awareness

Table 3: Oral health attitude of Indian and immigrant Tibetan teachers/caretakers

Questions	Options	Tibetans (%)	Indians (%)	Chi-square	P value
16. Tooth decay is transmissible from mother to child while kissing or sharing utensils	Agree	0	9 (7.25)	11.354	0.003*
	Disagree	34 (94.44)	82 (66.12)		
	Don't know	2 (5.55)	33 (26.61)		
17. A balanced diet is essential for healthy growth of a baby's teeth	Agree	3 (8.33)	93 (75)	78.989	0.0001***
	Disagree	33 (91.66)	17 (13.70)		
	Don't know	0	14 (11.29)		
18. Night time bottle or breast feeding can cause tooth decay	Agree	15 (41.67)	41 (33.06)	3.211	0.201
	Disagree	21 (58.33)	74 (59.67)		
	Don't know	0	9 (13.77)		
19. Frequent and prolonged breast or bottle feeding in the day time can cause tooth decay	Agree	5 (13.89)	25 (20.16)	0.820	0.664
	Disagree	27 (75)	84 (67.74)		
	Don't know	4 (11.11)	15 (12.09)		
20. A child's teeth should be cleaned or brushed as soon as the teeth erupts	Agree	6 (16.67)	44 (35.48)	17.100	0.0001***
	Disagree	27 (75)	45 (36.29)		
	Don't know	3 (8.33)	35 (28.22)		
21. Swallowing of tooth paste can be harmful to the child's teeth	Agree	4 (11.11)	31 (25)	73.910	0.0001***
	Disagree	5 (13.89)	84 (67.74)		
	Don't know	27 (75)	9 (7.25)		
22. Effective cleaning of teeth can be achieved by the child him or herself	Agree	3 (8.33)	25 (20.16)	4.956	0.084
	Disagree	33 (91.67)	93 (75)		
	Don't know	0	6 (4.83)		
23. You should take your baby for a dental checkup after the teeth erupt	Agree	5 (13.89)	38 (30.64)	27.538	0.0001***
	Disagree	31 (86.11)	47 (37.90)		
	Don't know	0	39 (31.45)		
24. Prolonged use of pacifier can affect the normal development of a child's teeth	Agree	5 (13.89)	36 (29.03)	19.437	0.000***
	Disagree	2 (5.56)	39 (31.45)		
	Don't know	29 (80.56)	49 (39.51)		

*Statistically significant, ***Highly significant

among the public at large. Oral health of school children is an important indicator of community health. Schools, besides playing a marked role in the growth of young minds, are important institutions that facilitate provision of preventive oral and general healthcare programs. School teachers represent one among the biggest organized forces, as they shape the future of any country and prepare the young ones for life.

According to responses in this study, majority of Indian teachers/care givers (83.06%) believed that baby teeth are important and 34.67% had opinion that mothers diet play a marked role in baby s teeth during pregnancy. These findings were in accordance with the Schroth *et al.*^[8] study done among the caregivers in Canada, in which 91.2% agreed that primary teeth are important and only 39.5% participants had opinion that mother's diet play an important role in baby's teeth during pregnancy.

About 59.67% Indian pre-school teachers/caretakers thought that night time bottle or breast feeding did not have any role in causing tooth decay, whereas very few (7.25%) Indian teachers/caregivers agreed that tooth decay is spread by sharing feeding

utensils and few (25%) had an opinion that ingestion of tooth paste is harmful. These findings were in accordance with the study by Mani *et al.*^[10] done among Malaysian caretakers, in which 56% responded that dental caries is not due to night time breast or bottle feeding, 15% agreed that tooth decay was caused by bacteria that are spread by sharing feeding utensils and very few (18%) strongly agree that ingestion of tooth paste can be harmful to a child's health.

Around 41.67% of the Tibetans caretakers and teachers know the importance of milk teeth and very few (25%) had the opinion that problems with milk teeth affect permanent dentition. In contrast with our results, Schroth *et al.*^[8] reported that among caregivers of Canada, majority (91.2%) knows the importance of baby teeth and 59.6% agreed that problems with primary dentition can affect permanent teeth.

About 58.33% Tibetan pre-school teachers/caretakers thought that tooth decay was not caused due to night time bottle or breast feeding whereas very few (11.11%) had an opinion that ingestion of tooth paste is harmful. These findings were in accordance with the study by Mani *et al.*^[10] done among

Malaysian caretakers, in which 56% responded that occurrence of dental caries is not due to night time breast or bottle feeding, and very few (18%) strongly agree that ingestion of tooth paste can be harmful to a child's health.

The oral health knowledge and oral health attitude of the caretakers and teachers were considerably poor in both the population; and significant difference in oral health attitude and oral health knowledge levels was present between immigrant Tibetan and the local Indian teachers/caretakers. This finding point to the fact that oral health awareness programs still has not reached these populations. The reports from a study done by Shakya *et al.*^[11] among anganwadi workers of Mangalore are contrarian to our study reports, which reported a high overall knowledge among anganwadi workers.

CONCLUSION

The assessment of oral health knowledge among the local Indian and immigrant Tibetan pre-school teachers and caretakers showed that, they were ill informed and lacked knowledge; especially regarding the importance of maternal health during pregnancy; etiology of dental caries and its infectious nature; ill effects of bed time breast/bottle feeding habit; the use of tooth paste, and the frequency of tooth brushing; the time for the child's first visit to a dentist and the significance of restoring primary teeth. This study establishes an immediate need for promotion of dental awareness in both Indian and Tibetan teachers/caretakers. Early educational intervention programs for the pre-school teachers/caretakers based on the identified risk factors could prove extremely beneficial in curbing this health problem.

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