

ORIGINAL RESEARCH

Pediatricians' Role in Oral Health of Children

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ABSTRACT

Objective: To evaluate the knowledge, attitude and practices of pediatricians toward oral health of children in Vadodara city.

Materials and methods: All 973 pediatricians registered in Indian Medical Association were included in the study. A close-ended questionnaire consisting of 22 questions was administered personally. The data obtained was subjected to statistical analysis using SPSS 14.0 version. Factor analysis (principal component analysis) was carried out to know the variation in knowledge of risk factors for oral diseases.

Results: Response rate was 82%. Most of them had knowledge of dental caries (100%), malocclusion (93%), gingivitis (90%) and periapical abscess (81%). Contributing risk factors according to pediatricians knowledge (calculated by factor analysis) was found to be 65% with sugar products, followed by 37% with bottle-feeding, 30% with harmful oral habits and 23% with oral hygiene practices. All pediatricians considered that oral health and primary teeth are of importance and in accordance majority of them counseled parents regarding sugar consumption and oral hygiene practices.

Conclusion: Majority of pediatricians had acceptable level of knowledge regarding common dental diseases of children. Their attitude and practices of oral health was found satisfactory.

Keywords: Knowledge, Attitude, Practice, Pediatrician, Oral health.

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INTRODUCTION

Primary preventive strategies for oral health are essential public health priority, since dental caries is the most common chronic disease among children.^{1,2}

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Poor children suffer disproportionately from dental caries and have limited access to dental care.^{3,4}

With training, physicians can effectively deliver preventive oral health services.^{5,6}

Pediatricians are considered to be in unique position to contribute to dental health of their young patients.⁷

Acknowledging the impact of dental disease on children's health and the unique role that pediatricians can play in addressing oral health beginning in infancy, the American Academy of Pediatrics (AAP) added oral health promotion to its strategic plan in 2006. By increasing their involvement in oral health during well-child care visits, pediatricians may play important role in improving the oral health.^{8,9}

Therefore, we undertook this study to know the knowledge, attitude, and practices regarding oral health of children among pediatricians in Vadodara city, Gujarat, India.

MATERIALS AND METHODS

This cross-sectional questionnaire study was carried out in Vadodara city in Gujarat state during September to November 2012. Study was conducted on all pediatricians Registered with IMA Vadodara Branch. All the 73 registered pediatricians were included in the study. Informed oral consent was taken prior to the study.

All pediatricians registered with Indian Medical Association, Vadodara branch were included. Pediatricians not willing to participate in the study and not registered in Indian Medical Association were excluded.

Participants received a 2-page questionnaire. A self-designed, pre-tested, close-ended, questionnaire consisting of 22 questions was prepared. The survey questions were divided into 4 domains. These domains were chosen based on review of the literature and important themes that emerged during pilot testing of an earlier version of the survey instrument. These domains included questions related to demographic data of the respondents, knowledge, attitude and practices of pediatricians toward oral health of children.

STATISTICAL ANALYSIS

Descriptive statistics were generated on demographic variables. Data regarding knowledge, attitude and practices towards oral health of children were collected and compiled. Factor analysis (principal component analysis) was carried out to evaluate the major contributing factor causing dental caries in children according to pediatricians knowledge. SPSS version 14.0 was used for statistical analysis.

RESULTS

In the present study, 60 pediatricians responded with a response rate of 82%.

Table 1 reveals knowledge of pediatricians toward oral health of children. All the subjects had knowledge of dental caries, 93% had knowledge of malocclusion, and 90% had knowledge of gingivitis. No statistically significant difference was found between knowledge of male and female pediatricians.

Table 2 shows distribution of risk factors for oral diseases in children according to pediatricians. Improper oral hygiene and bottle feeding were the main risk factors for dental diseases of children, followed by sweetened products, liquids and oral habits.

Table 3 shows percentage wise distribution of contributing factors in dental diseases of children according to pediatricians knowledge. Sugar products were the most contributing factor in dental diseases in children, followed by bottle feeding and oral habits. No statistically significant difference was found related to contributing factors for dental caries between of male and female pediatricians.

Table 4 explains pediatricians practices pattern related to oral health of children. Almost all the pediatricians considered that oral health and primary teeth (96%) are of importance and 83% of them routinely examined oral cavity of the children. Majority of them counseled parents regarding sugar consumption (96%) and oral hygiene practices (94%). Seventy-eight percent of pediatricians preferred to prescribe sugar-free syrups to children over sugar-containing syrups. Less than 25% of the pediatricians prescribed fluoride supplements to the children.

DISCUSSION

Oral health is an integral part of general health. In our country more than 70% of the population resides in villages, more than 40% of which is constituted by children. Pediatricians and primary health care providers due to frequent contacts with families are in ideal position to provide primary oral health care to the children.

Our results showed that more than 80% of the pediatricians had knowledge of dental caries, gingivitis, malocclusion and abscesses. Pediatricians routinely encounter with such oral problems in day to day practice as these oral diseases are common among children. More than three-fourth of all pediatricians considered improper oral hygiene, frequent consumption of sugar and sugar products and improper feeding habits as main risk factors responsible for these diseases.

According to Giuseppe et al¹ 96% of pediatricians frequent sugar consumption is a risk factor for dental caries. Our findings (83%) are similar with the results of this study (96%).

IIM Wu et al¹⁰ found that 60% of the pediatricians considered improper feeding habits poses risk of early childhood caries. In our study we observed that 88% considered improper feeding habits including bottle-feeding as a risk factor for dental diseases like early childhood caries whereas Giuseppe et al¹ found that 71% of pediatricians disagreed to consider bottle feeding as a risk factor.

We found that about 83% of the pediatricians routinely examined the oral cavity of the children in contrast to 60% of pediatricians in the a study carried out by Bhat SS et al.¹¹

Since, oral cavity is the gate way to general health, pediatricians routinely examine the oral cavity of children

Table 1: Distribution of knowledge of pediatricians toward oral health of children

<i>Oral disease</i>	<i>Male pediatricians N (%)</i>	<i>Female pediatricians N (%)</i>	<i>Total N(%)</i>
Dental caries	35 (58)	25 (42)	60 (100)
Malocclusion	31 (51)	25 (42)	56 (93)
Gingivitis	34 (57)	20 (33)	54 (90)
Periapical abscess	26 (43)	22 (38)	48 (81)

Chi-square = 0.99, p = 0.80 (NS)

Table 2: Distribution of risk factors for oral diseases in children according to pediatricians

<i>Risk factors</i>	<i>Number (percentage)</i>
Improper oral hygiene	58 (96)
Bottle feeding	53 (88)
Sweet products, liquids	50 (83)
Oral habits	47 (78)

Table 3: Distribution of contributing factors in oral diseases of children as per pediatricians' knowledge (factor analysis)

<i>Risk factor</i>	<i>Male pediatricians</i>	<i>Female pediatricians</i>	<i>Total N (%)</i>
Sugar	21 (35)	18 (30)	39 (65)
Bottle feeding	10 (17)	12 (20)	22 (37)
Oral habits	9 (15)	9 (15)	18 (30)
Sweet products, liquids	8 (13)	6 (10)	14 (23)

Chi-square = 0.60, p = 0.89 (NS)

Table 4: Distribution of pediatricians' practices toward oral health of children

	<i>Number (percentage)</i>
Importance of oral health	60 (100)
Routine oral cavity examination	50 (83)
Primary teeth are important	58 (96)
Decayed primary teeth to be treated	49 (82)
Sugar free syrup prescription	47 (78)
Advice of oral hygiene practices	57 (94)
Counseling regarding sugar consumption	56 (96)
Prescription of fluoride supplements	15 (24)
Dental referral	60 (100)

and considered oral health as important as general health and primary teeth as important as permanent teeth.

In this study, it is observed that all the pediatricians had knowledge of sugar free syrups available in market and 78% of them preferred to prescribe sugar-free syrups to the children whereas Bhat SS et al found that 62% of the pediatricians were unaware of the sugar-free syrups. Most of the pediatricians preferred to prescribe sugar-free syrups since 80% of them considered sugar and sugar products as risk factor for dental caries.

One of the major finding of the present study is that 90% of pediatricians counseled parents regarding sugar consumption and advised oral hygiene practices. These results are similar with the results (68%) found by Bhat SS et al,¹¹ whereas Giuseppe et al¹ concluded that majority of the pediatricians (91%) provided anticipatory guidance regarding oral disease prevention and counseled the parents about sugar consumption. Improper oral hygiene is a major contributing factor in oral diseases and pediatricians are found to be giving due emphasis on oral hygiene practices.

Less than one fourth (24%) of pediatricians prescribed fluoride supplements to the patients. This may be due to lack of knowledge about need of fluoride and fluoride prescription guide whereas DiGiuseppe et al found that almost all (89%) pediatricians prescribed dietary fluoride supplements to the children. Bader JD et al¹² concluded that there is also fair evidence indicating that physicians' consideration of fluoride exposure is incomplete. Bottenberg P et al¹³ found that 7% regularly prescribed fluoride supplements. Regarding recommended fluoride concentration in children's tooth-pastes in the UK, only 20% of the participants responded correctly.¹⁴

Pediatricians receive very little education on oral health during their medical training and numerous barriers exist to incorporating oral health into practice.¹⁵

In contrast with our findings, Long CM et al found Low referral rates for children with oral disease.¹⁶ Limitations of our study included small sample size, as we got response from 60 pediatricians out of 73 registered pediatricians. We used close-ended questions to explore pediatricians knowledge and attitude so we could not achieve their own detailed response. Their opinions might have differed from the answers we gave them in options.

CONCLUSION

Based on the results of the study, it is clear that most of the pediatricians routinely examined the oral cavity of the children and provided anticipatory guidance to them and their parents during their well child care visits. They had appropriate knowledge of common dental diseases of children (e.g. dental caries, malocclusion, gingivitis) and

of various risk factors of these diseases. All the pediatricians considered oral health and primary teeth important. They believed that decayed primary teeth must be treated as early as possible. Almost all pediatricians counseled the children and their parents regarding sugar consumption and oral hygiene maintenance. Although pediatricians attitude and practices toward oral health of children are satisfactory, their potential for oral health promotion of children needs to be explored especially in areas related to primary prevention of oral diseases and use of fluoride supplements.

REFERENCES

1. Di Giuseppe G, Nobile CG, Marinelli A, Angelillo IA. Knowledge, attitude and practices of pediatricians regarding the prevention of oral diseases in Italy. *BMC Public Health* 2006; Jul 5;6:176.
2. Pierce KM, Rozier RG, and Vann WF. Accuracy of pediatric primary care providers screening and referral for early childhood caries. *Pediatrics* 2002;109(5):p. e82.
3. General Accounting Office. Oral health: dental disease is a chronic problem among low-income populations. Available at: <http://www.gao.gov>. Accessed May 19, 2012.
4. Mouradian WE, Wehr E, Crall JJ. Disparities in Children's Oral Health and Access to Dental Care *JAMA* 2000;284:2625-2631.
5. Rozier RG, Stearns SC, Pahel BT, Quinonez RB, Park J. How a North Carolina program boosted preventive oral health services for low-income children? *Health Affairs* 2010;29(12):2278-2285.
6. Lewis CW, Barone L, Quinonez RB, Boulter S, Mouradian WE. Chapter oral health advocates: a nationwide model for pediatrician peer education and advocacy about oral health. *Int J Dent* 2013;2013.
7. Ripa LW. The role of pediatricians in dental caries detection and prevention. *Pediatrics* 1974;54:176-182.
8. Lewis CW, Grossman DC, Domoto DK, and Deyo RA. The role of the pediatrician in the oral health of children: a national survey 2000. *Pediatrics* 2000 Dec;106(6):E84.
9. Lewis CW, Cantrell DC, Domoto PK. Oral health in the pediatric practice setting: a survey of Washington State pediatricians. *J Public Health Dent* 2004 Spring;64(2):111-114.
10. IIM Wu, King NM, JSJ Tsai, HM Wong. The dental knowledge and attitudes of medical practitioners and caregivers of preschool children in macau. *HK J Pediatr* 2006;11:133-139.
11. Bhat SS, Sargod SS, Kiran Kumar BS. Pediatricians views about oral healthcare. *Indian J Pediatr* 2006;73(6):535-536.
12. Bader JD, Rozier RG, Lohr KN, Frame PS. Physicians' roles in preventing dental caries in preschool children: a summary of the evidence for the US. Preventive Services Task Force. *Am J Prev Med* 2004 May;26(4):315-325.
13. Bottenberg P, Lieven Van Melckebeke, Fred Louckx, Yvan Vandenplas. Knowledge of Flemish pediatricians about children's oral health – results of a survey. *Acta Paediatrica* 2008; 97(7):959-963.
14. Kalkani M, Ashley P. The role of pediatricians in oral health of preschool children in the United Kingdom: a national survey of pediatric postgraduate specialty trainees. *Eur Arch Pediatr Dent* October 2013;14(5):319-324.
15. Krol DM. Children's oral health and the role of the pediatrician. *Curr Opin Pediatr* 2010 Dec;22(6):804-808.
16. Long CM, et al. Pediatricians' assessments of caries risk and need for a dental evaluation in preschool aged children. *BMC Pediatr* 2012 Jul 11;12:49.