

Original Article

Investigating Parental Knowledge, Attitudes, and Practices Regarding Dental Caries Prevention in Adolescents

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ABSTRACT

Dental caries is an infectious disease resulting from the destruction of calcified tooth structures and is recognized as one of the most commonly experienced diseases among the general population. The aim of this investigation is to assess parental knowledge regarding the prevention of caries in adolescents. This cross-sectional study was conducted in 2025. A total of 150 parents of children aged between 12 and 18 years residing in Ilam city and its surrounding villages were enrolled. In the initial phase, four schools were selected from Ilam County, and the parents of the students were sampled using random sampling techniques. Upon data collection, the information was entered into SPSS version 21. Results showed that 50% of parents were male, 48.7% had education below diploma, 53.3% were employed, 74% of parents lived in the city, and 50% of parents had average economic status. The findings indicated that the mean (SD) parental knowledge score was 12.5 (3.24), attitude score was 20.81 (2.94), and the practices score was 5.74 (1.46). Additionally, the results showed, there was a relationship between educational status and KAP score, and the M(SD) of KAP score being higher in individuals with higher education than in those with lower education. Moreover, parents who had more children reported higher knowledge and attitude scores. It is recommended that educational interventions be implemented to improve parents' KAP scores.

Introduction

Oral and dental health is considered a crucial branch of public health that significantly influences overall individual well-being. Oral health is a lifelong necessity and an integral component of general public health. Indeed, inadequate oral hygiene and untreated oral

diseases can deeply affect individuals' quality of life [1–3]. Maintaining healthy teeth and gums can prevent halitosis (bad breath), dental caries (tooth decay), and gum disease [4].

Dental caries is a chronic infectious disease and the most prevalent childhood illness. Its development is influenced not only by bacterial factors but also by other elements, including the host, diet, and age. Dental caries manifests early

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in life, concurrent with the eruption of primary teeth, leading to disruptions in nutrition, physical growth and development, speech, and an individual's interaction with their environment [5–7].

One cause of dental caries is the consumption of sugary substances, particularly at night, which is often linked to socioeconomic and cultural habits. Dental caries is widespread globally, affecting all countries [8,9]. A detailed examination of dental caries reveals that there is no uniform or proportional distribution in the prevalence of dental decay. Caries detection is a vital part of a dentist's daily work, encompassing the stages of caries detection, severity assessment, and assessment of caries activity [10–12].

The DMFT index is one of the most commonly used indices in dentistry to reflect the oral health status within a community [13,14]. Dental caries is an infectious disease resulting from the destruction of calcified tooth structures and is recognized as one of the most commonly experienced diseases among the general population. In fact, only a limited number of people go through life without experiencing dental caries, which is why it is considered a prevalent and pervasive problem in both developed and developing nations [15–17]. Dental services are costly and account for a significant portion of health expenditures, particularly in developing countries [18,19]. Dental caries is one of the most common childhood diseases, being especially rampant in developing nations [20]. Untreated dental caries leads to problems with eating and sleeping, pain, the need for extensive treatment, emergency dental visits, hospital admissions, and a reduction in overall quality of life [21–23]. Given the importance of dental caries and the vital role of prevention in its reduction, this study was conducted with the aim of investigating parental knowledge regarding the prevention of caries in adolescents.

Methods

Study Design and Participants

This cross-sectional study was conducted in 2025. A total of 150 parents (fathers or mothers)

of children aged between 12 and 18 years residing in Ilam city and its surrounding villages were enrolled. In the initial phase, four schools were selected from Ilam City, and the parents of the students were sampled using random sampling techniques. The inclusion criteria were having a child within the 12–18 age range and providing informed consent for participation. Incomplete completion of the questionnaires served as the exclusion criterion.

Data Collection Instrument

Data were collected using a researcher-made questionnaire designed to assess parental knowledge, attitude, and practice (KAP) regarding the prevention of dental caries in their children aged 12 to 18 years.

- Knowledge Questionnaire: This section comprised 20 questions rated on a dichotomous (Yes/No) basis, where “Yes” scored 1 point and “No” scored 0 points.
- Attitude Questionnaire: This section consisted of 5 questions rated on a Likert scale ranging from 1 to 5. A total score of 25 indicated a positive attitude toward caries prevention, whereas a score of 5 indicated a negative attitude.
- Practice Questionnaire: This section contained 5 questions assessing parental practices in caries prevention. Scoring was based on the response: “Yes” scored 2 points, “Sometimes” scored 1 point, and “No” scored 0 points.

The validity and reliability of the knowledge and attitude instruments regarding dental caries were investigated and confirmed by the researchers.

Ethical Considerations and Statistical Analysis

Following the acquisition of the ethical code IR.MEDILAM.REC.1404.014, the researchers visited the selected schools and educational centers to administer the questionnaires directly to the parents (father or mother). Upon data collection, the information was entered into SPSS version 21. Statistical analysis was performed using independent samples t-tests, ANOVA, and regression analysis.

Results

The results showed that 50% of parents were male, 48.7% had education below diploma,

53.3% had employment status, 74% of parents lived in the city, and 50% of parents had average economic status ([Table 1](#)).

Table 1. Demographic characteristics

Variable	N	%
Gender	Father	50
	Mother	50
Education	Illiterate	8.7
	Below diploma	48.7
	University degree	42.7
Occupation	Employed	53.3
	Unemployed	46.7
Income	Poor	19.3
	Average	50
	Good	30.7
City	Excellent	0
	Rural	74
Number of children	Urban	26
	1	66.7
	2	28
Father Age	>2	5.3
	Mean ± SD	42.85
Mother Age	Mean ± SD	30.49

The findings showed that the M(SD) parental knowledge score was 12.5 (3.24), attitude score

was 20.81 (2.94), and practices score was 5.74 (1.46) ([Table 2](#)).

Table 2. M(SD) status of KAP score in parents

Variables	Score range	M(SD)	Minimum	Maximum
Knowledge score	0.20	12.5 (3.24)	7	19
Attitudes score	5-25	20.81 (2.94)	12	25
Practices score	0.10	5.74 (1.46)	3	9

The results showed that there was a relationship between educational status and KAP score, and the M(SD) of KAP score was higher in people with higher education than in people with lower education. Also, parents who had more children reported higher knowledge and attitude scores ([Table 3](#)).

Discussion

In the study conducted by Ezzati *et al.*, the relationship between tooth decay and KAP (knowledge, attitude, and practice) was examined among 348 students (both male and

female) aged 12 to 14 years. The instruments utilized included clinical examinations and a structured questionnaire. Clinical examinations were performed by a dental technician in collaboration with health experts, while questionnaire data were collected using a researcher-made KAP tool. According to the findings, the mean (SD) scores were as follows: knowledge 5.4 (1.8), attitude 37.86 (5.18), and practice 15.71 (4.28); the mean number of decayed teeth 5.31 (2.90), filled teeth 1.23 (0.65), extracted teeth 0.38 (0.11), and the DMFT index was 6.07 (3.47) [17].

Table 3. Comparison of M(SD) of KAP score according to demographic characteristics

Variable		Knowledge M(SD)	Attitude M(SD)	Practice M(SD)
Gender	Father	12.65 (3.23)	21.04 (2.85)	5.62 (1.52)
	Mother	12.36 (3.27)	20.58 (3.03)	5.86 (1.39)
	P-value	0.58	0.34	0.31
Education	Illiterate	7.69 (0.63)	17.53 (0.66)	5.15 (1.21)
	Below diploma	10.98 (1.89)	20.21 (1.94)	5.27 (1.10)
	University degree	15.21 (2.4)	22.15 (3.41)	6.40 (1.61)
	P-value	0.000	0.000	0.000
Occupation	Employed	12.3 (3.24)	20.73 (2.80)	5.93 (1.42)
	Unemployed	12.74 (3.23)	20.90 (3.11)	5.52 (1.48)
	P-value	0.40	0.73	0.08
Income	Poor	12.82 (3.51)	21.41 (2.80)	6.10 (1.54)
	Average	12.18 (3.47)	20.93 (2.83)	5.81 (1.52)
	Good	12.82 (2.64)	20.23 (3.16)	5.41 (1.25)
	Excellent	-	-	-
	P-value	0.48	0.21	0.11
City	Rural	12.55 (3.17)	20.83 (2.93)	5.77 (1.48)
	Urban	12.35 (3.46)	20.74 (3.02)	5.66 (1.40)
	P-value	0.74	0.86	0.89
Number of children	1	12.02 (3.27)	20.42 (3.07)	5.65 (1.51)
	2	12.92 (2.94)	21.23 (2.57)	6.04 (1.36)
	>2	16.37 (0.51)	23.50 (0.53)	5.37 (1.18)
	P-value	0.001	0.009	0.25
Father Age	Mean, SD (43.12, 8.45)	0.000	0.397	0.747
Mother Age	Mean, SD (35.6, 7.9)	0.000	0.02	0.29

In the study by Soltani *et al.*, the knowledge and attitudes of mothers with children aged 3–6 years in Isfahan, Iran, were assessed. The knowledge section of the questionnaire contained 12 questions regarding the number of deciduous teeth, timing of eruption of primary and permanent teeth, and factors influencing dental caries in children. The attitude section included 7 items, evaluating mothers' perceptions of the importance of primary teeth, as well as their care and restoration. The level of mothers' knowledge regarding their children's oral hygiene (OH) was 14.2% good, 61.7% moderate, and 24.1% poor. Mothers with higher educational attainment had significantly better OH knowledge scores. Regarding attitude, 89.4% of the mothers had a positive attitude, while 10.6% had a moderate attitude [24]. In the study by Halvani *et al.*, the KAP of parents with children under 12 years of age was assessed concerning space maintainers and primary teeth. The mean age of the children was 6.45 years (range: 1–12). The mean parental knowledge score was 13.5 (3.92) out of 40, the

mean attitude score 38.09 (6.54) out of 80, and the mean practice score 9.26 (1.48) out of 20 [25].

Naderifar *et al.* conducted a study involving 500 mothers with children aged 1–6 years in Ilam, Iran. The data were collected via a questionnaire administered to 500 mothers in Zahedan city. According to the findings, in terms of oral health practices, 69.8% of mothers demonstrated moderate performance, and 30.2% showed poor performance, while none exhibited good performance [26].

Similarly, in the study by Safari *et al.*, the status of parents' KAP was evaluated using three questionnaires: a knowledge questionnaire (24 items), an attitude questionnaire (10 items), and a practice questionnaire (14 items). The results indicated that 49.9% of parents had good knowledge, 73.3% had a positive attitude, and 29.1% had good practices. Additionally, 12.3% had poor knowledge, 6.1% showed poor attitude, and 12.8% exhibited poor practices [27].

Conclusion

It is recommended that educational interventions be implemented to improve parents' KAP scores.

Consent for Publication

All authors have expressed their consent to the publication of this study

Conflict of Interest

The authors declared that there was no conflict of interest.

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Authors' Contributions

MR & FF conceptualized the article and contributed to the overall design; MR & FF, contributed to data collection, analysis, and manuscript preparation; MR & FF contributed to data collection and manuscript preparation. All authors contributed to reviewing and editing. All authors have approved the final manuscript.

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Reference

- [1] Salarian, S., Ansari Bejestani, M.R., Owlia, F. **Mothers' oral health literacy and its relationship with children's dmft: A cross-sectional study in an Iranian population.** *Journal of Mashhad Dental School*, **2025**, 49(1), 60-72.
- [2] Sheikhi, S., Shekarchi Zadeh, H., Saied-Moallemi, Z. **The relationship between mothers' oral health literacy and their children's oral health status.** *Journal of Dental Medicine*, **2018**, 31(3), 175-184.

- [3] Farhad, S.Z., Karbalaehasanesfahani, A., Dadgar, E., Nasiri, K., Hosseini, N.M., Valian, N., Nabi Afjadi, M. **Promising potential effects of resveratrol on oral and dental health maintenance: A comprehensive review.** *Naunyn-Schmiedeberg's Archives of Pharmacology*, **2025**, 398(2), 1367-1389.
- [4] Ismail, A.F., Ardini, Y.D., Mohamad, N., Bakar, H.A. **Association between parental oral health literacy and children's oral health status.** *Revista Latinoamericana de Hipertension*, **2018**, 13(3), 305-309.
- [5] Costacurta, M., Di Lauro, M., Cornali, K., Docimo, R., Noce, A. **developmental defects of enamel and dental caries in pediatric patients with chronic kidney disease—mineral bone disorders.** *Applied Sciences*, **2025**, 15(3), 1164.
- [6] Muntean, A., Mzoughi, S.M., Pacurar, M., Candrea, S., Inchingolo, A.D., Inchingolo, A.M., Palermo, A. **Silver diamine fluoride in pediatric dentistry: effectiveness in preventing and arresting dental caries—a systematic review.** *Children*, **2024**, 11(4), 499.
- [7] Dos Santos, P.G.S.T., Travassos, R.M.C., de Menezes, M.R.A., Prosini, P., de Albuquerque Pontes, M.M., Alves, J., de Almeida, G.M. **Pediatric syrups and their impact on oral health: The correlation with dental caries.** *Derecho y Cambio Social*, **2025**, 22(79).
- [8] Elamin, A., Garemo, M., Gardner, A. **Dental caries and their association with socioeconomic characteristics, oral hygiene practices and eating habits among preschool children in Abu Dhabi, United Arab Emirates—the NOPLAS project.** *BMC Oral Health*, **2018**, 18(1), 104.
- [9] Doichinova, L., Bakardjiev, P., Peneva, M. **Assessment of food habits in children aged 6–12 years and the risk of caries.** *Biotechnology & Biotechnological Equipment*, **2015**, 29(1), 200-204.
- [10] Nishimura, M., Oda, T., Kariya, N., Matsumura, S., Shimono, T. **Using a caries activity test to predict caries risk in early childhood.** *The Journal of the American Dental Association*, **2008**, 139(1), 63-71.
- [11] Piovesan, C., Ardenghi, T.M., Guedes, R.S., Ekstrand, K.R., Braga, M.M., Mendes, F.M. **Activity assessment has little impact on caries parameters reduction in epidemiological surveys with preschool children.** *Community Dentistry and Oral Epidemiology*, **2013**, 41(3), 204-211.
- [12] Cameron, A.C., Widmer, R.P. **Handbook of Pediatric Dentistry E-Book.** *Elsevier Health Sciences*, **2021**.
- [13] Zemene, M.A., Dessie, A.M., Anley, D.T., Ahunie, M.A., Gebeyehu, N.A., Adella, G.A., Abebe, E.C. **Dental caries and mean values of DMFT among children with cerebral palsy: A systematic review and meta-analysis.** *BMC Oral Health*, **2024**, 24(1), 241.
- [14] Sabzevar, S.A., Valaei-Barhagh, A., Ghasemi, S.A., Sabzevar, N.A., Hassanipour, S. **Evaluating the**

DMFT and DMFT indices in people with epilepsy: A systematic review and meta-analysis. *Medicine*, **2025**, 104(32), e43611.

[15] Shaghaghian, S., Malekmakan, L., Rahimian, V., Savadi, N. Dental caries status and its associated factors in pregnant women, Shiraz, Iran, 2014. *Journal of Oral Health and Oral Epidemiology*, **2017**, 6(3), 165-172.

[16] Babaei Hatkehlouei, M., Tari, H., Goudarzian, A.H., Hali, H. Decayed, missing, and filled teeth (DMFT) index among first-grade elementary students in Mazandaran Province, Northern Iran. *Journal of Pediatric Perspectives*, **2017**, 5(6), 5069-5077.

[17] Ezati, F., Bakhshi, E., Ezati, E., Salimi, N. Investigate of tooth decay and its relationship with knowledge, attitude and performance (Kap) in high school students in Islamabad-E-Gharb city. *Journal of Arak University of Medical Sciences*, **2022**, 25(3), 450-463.

[18] Kirchmann, B.S., Lisson, J.A., Kinzinger, G.S.M. Correlations of the DMFT Index with socioeconomic status, dietary habits, and lifestyle factors in children and adolescents in a German dental practice in North Rhine-Westphalia. *Archive of Orofacial Data Science*, **2025**, 2.

[19] Dunleavy, G., Verma, N., Raghupathy, R., Jain, S., Hofmeister, J., Cook, R., West, N. Inequalities in oral health: estimating the longitudinal economic burden of dental caries by deprivation status in six countries. *BMC Public Health*, **2024**, 24(1), 3239.

[20] Hyde, S., Dupuis, V., Mariri, B.P., Dartevelle, S. Prevention of tooth loss and dental pain for reducing the global burden of oral diseases. *International Dental Journal*, **2017**, 67, 19-25.

[21] Choi, S.E., White, J., Mertz, E., Normand, S.L. Analysis of race and ethnicity, socioeconomic factors, and tooth decay among US children. *JAMA Network Open*, **2023**, 6(6), e2318425-e2318425.

[22] Peng, S.M., McGrath, C. What can we do to prevent small children from suffering from tooth decay? *Evidence-Based Dentistry*, **2020**, 21(3), 90-91.

[23] Baniebrahimi, G., Rahbar, A., Kharazifard, M.J., Alavi Milani, H. A cross-sectional study investigating factors influencing parents' choice of pediatric dentists for young children. *Journal of Mashhad Dental School*, **2025**, 49(3), 269-290.

[24] Soltani, R., Sharifirad, G., Hasanzadeh, A., Golshiri, P., Barati, M. Mothers' knowledge and attitude on oral health preschool children in Isfahan, Iran. *Journal of Health System Research*, **2013**, 9(7), 712-719.

[25] Halvani, N., Bahrololoomi, Z., Moradi, O.M., Zarebidaki, Z. Evaluation of knowledge, attitude and practice of parents referred to dental clinics toward importance of the primary teeth and space maintaining of them in city of Yazd in 2018. *Journal of Shahid Sadoughi University of Medical Sciences*, **2021**, 29(1), 3375-88.

[26] Naderifar, M., Ghaljaei, F., Akbarizadeh, M.R. Determination of the mothers' practice about orodental health of their children up to six years old. *Zahedan Journal of Research in Medical Sciences*, **2010**, 12(4).

[27] Safari, M., Soltani, F., Safari, S., Darabian, S. Evaluation of knowledge, attitude and practice of parents in Delfan city-Iran about oral health of their 6-12-year-old children in 2021. *Journal of Dental Medicine*, **2022**, 35, 218-227.