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Parents' knowledge of among oral healthcare among in Saudi Arabia: A cross-sectional study

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Abstract:

Limited oral-health knowledge among parents may hinder effective prevention of early childhood caries in young children. Therefore, it is of interest to assess the oral-health knowledge among parents in Saudi Arabia and associated factors. An online questionnaire was completed by 2,331 parents of children aged eight months to six years. Knowledge and opinions were assessed across 14 items using independent t-test, ANOVA, Chi-square and Fisher's exact test. Education and income significantly influenced parental knowledge ($p < 0.001$), with 40% holding a bachelor's degree and 47% earning below 5,000 SAR. Higher education and income were associated with better oral-health knowledge, highlighting their importance in preventing early childhood caries.

Keywords: Oral health, oral hygiene, dental caries, parents' knowledge, childhood**Background:**

Oral health is essential for maintaining a disease-free mouth and supporting children's overall development [1]. Early Childhood Caries (ECC) is the most common chronic disease in children younger than six years and remains highly prevalent in Saudi Arabia [2]. Parental knowledge, attitudes and practices strongly influence children's oral-health outcomes and preventive behaviors Globally, dental caries affects approximately 2.43 billion people, while ECC prevalence among Saudi pre-schoolers remains substantially high [3]. Studies report limited parental awareness regarding primary teeth, early dental visits and appropriate feeding practices, with misconceptions about night time bottle-feeding remaining common [4, 5]. Therefore, it is of interest to evaluate the oral-health knowledge among parents in Saudi Arabia and identify factors associated with their knowledge of children's oral health.

Methods:**Study population:**

This cross-sectional study targeted parents of children aged 8 months to 6 years. Only legal caregivers or biological parents of children within this age group were contacted through the online survey. The survey was open for twelve weeks, beginning in May 2023 and was conducted using a digital platform that allowed participants to be drawn from all Saudi Arabian regions rather than a single location. Ethical approval was obtained from the Alfaisal University Ethics Committee, the study was carried out in accordance with the Declaration of Helsinki and informed written consent was secured from all parents.

Sampling method and sample size:

Convenience sampling was used and the sample size was 2,331. The online survey was distributed via social-media channels such as WhatsApp, LinkedIn, Facebook and Twitter, in both Arabic and English, with a skilled translator ensuring linguistic precision and conceptual equivalence. The questionnaire underwent form and content validation by a committee of expert

specialists who assessed clarity, relevance and alignment with the study objectives. Snowball sampling was also used: the survey link was distributed to individuals in the target group who then shared it with other eligible individuals meeting the inclusion criteria, to facilitate access to the target group and increase participation.

Data collection tools and analysis:

Responses were obtained on a 27-point questionnaire integrating a self-administered informed-consent form. The survey included sections on demographic questions (age, gender, income, marital status, education and citizenship), self-perception of dental health, the dental health of preschool children and opinions on dental care for young children. Participants who were parents or caregivers of children aged 8 months to 6 years, willing to participate and Saudi or non-Saudi nationals residing in Saudi Arabia were included. Before the main study, a pilot with 20 participants was conducted to assess the questionnaire's applicability and reliability; inter-observer agreement was determined using Cohen's kappa, which yielded 0.78 (substantial agreement) and pilot data were not used in the main study. Data were entered in Microsoft Excel and imported into SPSS v25. Categorical variables are presented as frequencies and percentages. Knowledge and opinion were assessed through 14 multiple-choice questions (nine on knowledge, five on opinions) each with one correct answer scored one point, giving a maximum total of 14, reported as mean $\pm$ standard deviation. The mean knowledge-and-opinion score was compared between demographic variables using the independent-samples t-test (two categories) and one-way ANOVA (more than two categories), with Tukey's post-hoc test to identify significantly different categories. Attitude questions were compared using the Chi-square test or Fisher exact test (for low expected frequencies). A p-value less than 0.05 were considered statistically significant.

Results:

There were 2,331 respondents, whose demographic characteristics are given in **Table 1**. Females constituted 76% of the study population, most participants (46%) were aged 31-40 years, 92% were married and 94% were Saudi nationals; half (50%) were unemployed or housewives, 47% had a monthly income below 5,000 SAR, 40% held a bachelor's degree and 82% were from the Central region. Almost half (48%) had four or more children and the age at which the first child started brushing was evenly distributed (26% up to two years, 38% at three to four years, 37% at four to six years). In this survey, most respondents (88%) valued the condition of their teeth. Despite this, a significant proportion (68%) ignored routine check-ups and sought dental care only when in discomfort, while 55% assessed their overall oral health as "excellent" or "very good." The respondents were asked nine questions about their knowledge of preschool children's dental health (**Table 2**). Knowledge was generally low, with three questions having fewer than 30% correct responses: the fluoride content of baby paste (8%), the parent's position while brushing (14%) and the best time to give sugary snacks (27%). Better responses were seen for the foods that cause tooth decay (83%) and for answering "No" to the use of a sweetened baby bottle or honey-dipped pacifier (76%). **Table 3** presents respondents' opinions on dental care for children. The importance of decay in baby teeth was considered "Very important" by 71% of respondents and 69% preferred "fill it" if a baby tooth decayed. The lowest response was for the child's first dental visit, with only 14% choosing when the baby was getting the first teeth. Overall, 51% of respondents' under-five children had visited the dentist, mainly for a check-up (40%). The correct answers for the fourteen knowledge and opinion questions were summed into a total score and compared between demographic variables (**Table 4**). Females scored higher than males ($p < 0.001$). Students scored higher than employed, unemployed/housewife or retired respondents ($p = 0.013$). Participants earning more than 15,000 SAR scored higher than those earning under 5,000 SAR ($p = 0.007$). Knowledge increased significantly with education level ($p < 0.001$), from the lowest score for those with intermediate education to the highest for postgraduate/doctorate holders. Respondents from the Eastern region scored higher than those

From the Northern and Southern regions ($p = 0.015$), those with two children scored higher than those with three or more ($p < 0.001$) and respondents whose children started brushing before two years of age had the highest scores ($p < 0.001$). There was no difference by age group, marital status or nationality ($p > 0.05$). Respondents' self-perception of the importance of teeth was compared with demographic variables (**Table 5**). More females (90%) considered their teeth "Very important" than males (83%) ($p < 0.001$) and 93% of respondents whose children started brushing before two years of age considered their teeth "Very important" versus 86% of those whose children started brushing at four to six years ($p < 0.001$). There was no association with the other demographic variables ($p > 0.05$). **Table 6** shows the association of demographic variables with how often respondents visit the dentist. More females (68%) never went or went only when in pain, compared with 65% of males ($p < 0.001$). Saudi nationals were more likely (30%) to visit every six months once a year than non-Saudis (20%) ($p = 0.014$). Students (49%), respondents earning above 15,000 SAR or 10,000-15,000 SAR (35% each), those with a postgraduate/doctorate or bachelor's degree (34%) and those with one or two children (34-35%) were more likely to attend regularly ($p < 0.001$ to $p = 0.022$). Respondents whose children started brushing before two years of age were most likely (42%) to visit regularly ($p < 0.001$). There was no association with age, marital status or region ($p > 0.05$). Respondents' self-rated dental health was compared with demographic variables (**Table 7**). Younger respondents (61%) rated their dental health "Excellent" more often than those aged 41-50 (52%) or over 50 (51%) ($p = 0.014$). Students rated it "Excellent" more often than employed (59%), unemployed/housewife (51%) or retired (54%) respondents ($p = 0.002$). Those earning above 15,000 SAR (63%) or 10,000-15,000 SAR (62%) rated it "Excellent" more often than those earning less than 5,000 SAR (50%) ($p < 0.001$). Postgraduate/doctorate holders (32%) rated it "Excellent" more than those with lower education ($p < 0.001$) and respondents whose children started brushing before two years (22%) rated it "Excellent" more often than those whose children started at four to six years (10%) ($P < 0.001$). No association was found for gender, marital status, nationality or region ($p > 0.05$).

Table 1: Demographic characteristics of the study population

Variable	Category	n	%
Gender	Male	551	24%
	Female	1780	76%
Age (years)	18-30	348	15%
	31-40	1065	46%
	41-50	698	30%
	>50	220	9%
Marital status	Married	2150	92%
	Divorced / Widowed	181	8%
Nationality	Saudi	2189	94%
	Non-Saudi	142	6%
Employment	Student	37	2%
	Employed	991	43%
	Unemployed / Housewife	1158	50%
	Retired	145	5%
Monthly income (SAR)	<5,000	1090	47%

	5,000-10,000	587	25%
	>10,000-15,000	308	13%
	>15,000	346	15%
Education level	Up to Intermediate	318	13%
	High School / Diploma	879	38%
	Bachelor's degree	928	40%
	Postgraduate / Doctorate	206	9%
Region	Northern	138	6%
	Southern	57	2%
	Central	1921	82%
	Eastern	80	4%
	Western	135	6%
No. of children	One	224	10%
	Two	465	20%
	Three	530	22%
	Four or more	1112	48%
Age first child started brushing	Up to 2 years	600	25%
	3-4 years	879	38%
	>4 to 6 years	852	37%

Table 2: Knowledge about the dental health of preschool children (correct answer in bold)

Question	Response	n	%
How often should you brush your child's teeth?	Once daily	725	31%
	Twice daily	1188	51%
	Three times daily	418	18%
What size of brush is best for your child?	Small	1436	61%
	Medium	877	38%
	Large	18	1%
Quantity of paste to be used?	Enough to cover the entire head	442	19%
	Cover half the head	647	28%
	Pea size	1123	48%
Your position while brushing your child's teeth?	I do not know	119	5%
	In front of the child	650	28%
	Behind the child	334	14%
	Beside the child	1098	47%
Does your child's toothpaste contain fluoride?	I do not know	249	11%
	Yes	1178	51%
	No	382	16%
Fluoride content of the baby paste	I do not know	771	33%
	1,000 ppm	177	8%
	1,500 ppm	56	2%
	500 ppm	159	7%
Which of the following cause tooth decay?	I do not know	1939	83%
	Chocolate	1929	83%
	Jam	309	13%
	Sugar	1739	75%
	Sweets	2119	91%
What is the best time to give sugary snacks?	Biscuits	353	15%
	Fruit	30	1%
	Soft drinks	1773	76%
	Morning	872	37%
	Night	145	6%
	Meal times	618	27%
	Any time	346	15%
	I do not know	350	15%
Did the child use a sweetened baby bottle or a pacifier dipped in honey?	Yes	272	12%
	No	1760	75%
	Not sure	299	13%

Table 3: Opinions on dental care for young children

Question	Response	n	%
Importance of decay in baby teeth?	Not important at all	77	3%
	Somewhat important	439	19%
	Very important	1650	71%
	Not sure	165	7%
Child's first dental visit?	When getting the first teeth	319	14%
	In the presence of all baby teeth	844	36%
	When the baby gets some teeth	492	21%
	I do not know	676	29%
Has your child under age 5 visited the dentist?	Yes	1182	51%
	No	1041	44%
	Not sure	108	5%

If yes, what did they do?	Check-up	692	40%
	Filling	292	17%
	Tooth extraction	186	11%
	Gave medication	150	9%
	Other treatment	96	5%
	Not sure	314	18%
If a baby tooth decayed, what treatment would you prefer?	Leave it alone	50	2%
	Fill it	1614	69%
	Extract the tooth	302	13%
	Not sure	365	16%

Table 4: Association of demographic variables with the knowledge & opinion total score (maximum = 14)

Variable	Category	n	Mean $\pm$ SD	p-value
Gender	Male	551	6.16 $\pm$ 2.10	<0.001
	Female	1780	6.63 $\pm$ 1.96	
Age (years)	18-30	348	6.57 $\pm$ 1.92	0.15
	31-40	1065	6.47 $\pm$ 2.00	
	41-50	698	6.48 $\pm$ 2.00	
	>50	220	6.80 $\pm$ 2.16	
Marital status	Married	2150	6.53 $\pm$ 2.00	0.24
	Divorced / Widowed	181	6.35 $\pm$ 2.02	
Nationality	Saudi	2189	6.53 $\pm$ 2.01	0.44
	Non-Saudi	142	6.39 $\pm$ 1.91	
Employment	Student	37	7.38 $\pm$ 2.05	0.013
	Employed	991	6.60 $\pm$ 2.03	
	Unemployed / Housewife	1158	6.43 $\pm$ 1.95	
	Retired	145	6.50 $\pm$ 2.21	
Monthly income (SAR)	<5,000	1090	6.39 $\pm$ 2.00	0.007
	5,000-10,000	587	6.56 $\pm$ 1.99	
	10,000-15,000	308	6.63 $\pm$ 1.96	
	>15,000	346	6.78 $\pm$ 2.07	
Education level	Up to Intermediate	318	5.86 $\pm$ 2.05	<0.001
	High School / Diploma	879	6.24 $\pm$ 1.96	
	Bachelor's degree	928	6.87 $\pm$ 1.94	
	Postgraduate / Doctorate	206	7.13 $\pm$ 1.96	
Region	Northern	138	6.15 $\pm$ 2.09	0.015
	Southern	57	6.35 $\pm$ 2.11	
	Central	1921	6.53 $\pm$ 1.98	
	Eastern	80	7.13 $\pm$ 2.10	
	Western	135	6.55 $\pm$ 2.14	
No. of children	One	224	6.74 $\pm$ 2.03	<0.001
	Two	465	6.82 $\pm$ 1.92	
	Three	530	6.40 $\pm$ 1.96	
	Four or more	1112	6.41 $\pm$ 2.04	
Age first child started brushing	Up to 2 years	600	7.09 $\pm$ 2.08	<0.001
	3-4 years	879	6.60 $\pm$ 1.86	
	>4 to 6 years	852	6.04 $\pm$ 1.99	

Table 5: Association of demographic variables with "How important are teeth to you?" n (%)

Variable	Category	Not important / Not sure	Somewhat important	Very important	p
Gender	Male	10 (2%)	82 (15%)	459 (83%)	<0.001
	Female	22 (1%)	159 (9%)	1599 (90%)	
Age (years)	18-30	4 (1%)	34 (10%)	310 (89%)	0.71
	31-40	11 (1%)	117 (11%)	937 (88%)	
	41-50	12 (2%)	69 (10%)	617 (88%)	
	>50	5 (2%)	21 (10%)	194 (88%)	
Marital status	Married	30 (1%)	217 (10%)	1903 (89%)	0.39
	Divorced / Widowed	2 (1%)	24 (13%)	155 (86%)	
Nationality	Saudi	31 (1%)	225 (11%)	1933 (88%)	0.73
	Non-Saudi	1 (1%)	16 (11%)	125 (88%)	
Employment	Student	1 (2%)	5 (14%)	31 (84%)	0.21 ^a
	Employed	14 (1%)	109 (11%)	868 (88%)	
	Unemployed / Housewife	12 (1%)	113 (10%)	1033 (89%)	
	Retired	5 (3%)	14 (10%)	126 (87%)	
Monthly income (SAR)	<5,000	15 (1%)	113 (11%)	962 (88%)	0.58
	5,000-10,000	10 (2%)	50 (8%)	527 (90%)	
	10,000-15,000	3 (1%)	36 (12%)	269 (87%)	
	>15,000	4 (1%)	42 (12%)	300 (87%)	
Education level	Up to Intermediate	9 (3%)	30 (9%)	279 (88%)	0.085
	High School / Diploma	12 (1%)	78 (9%)	789 (90%)	
	Bachelor's degree	9 (1%)	111 (12%)	808 (87%)	
	Postgraduate / Doctorate	2 (1%)	22 (11%)	182 (88%)	

Region	Northern	2 (1%)	14 (11%)	122 (88%)	0.54*
	Southern	1 (2%)	6 (10%)	50 (88%)	
Central	Eastern	25 (1%)	191 (10%)	1705 (89%)	0.13
	Western	1 (1%)	9 (11%)	70 (88%)	
No. of children	One	3 (2%)	21 (16%)	111 (82%)	0.13
	Two	3 (1%)	24 (11%)	197 (88%)	
Three	Four or more	4 (1%)	60 (13%)	401 (86%)	<0.001
	Up to 2 years	4 (1%)	45 (8%)	481 (91%)	
Age first child started brushing	3-4 years	21 (2%)	112 (10%)	979 (88%)	<0.001
	>4 to 6 years	4 (1%)	41 (7%)	555 (92%)	
	3-4 years	8 (1%)	97 (11%)	774 (88%)	
	>4 to 6 years	20 (2%)	103 (12%)	729 (86%)	

Table 6: Association of demographic variables with “How often do you go to the dentist?”, n (%)

Variable	Category	Never / Only when in pain	Every 6 months / Once a year	Once in two years	p
Gender	Male	357 (65%)	160 (29%)	34 (6%)	<0.001
	Female	1206 (68%)	528 (30%)	46 (2%)	
Age (years)	18-30	220 (63%)	120 (34%)	8 (3%)	0.06
	31-40	722 (68%)	311 (29%)	32 (3%)	
41-50	>50	483 (69%)	186 (27%)	29 (4%)	0.26
	Married	138 (63%)	71 (32%)	11 (5%)	
Marital status	Divorced / Widowed	1451 (67%)	625 (29%)	74 (4%)	0.014
	Nationality	112 (62%)	63 (35%)	6 (3%)	
Nationality	Saudi	1452 (66%)	660 (30%)	77 (4%)	<0.001
	Non-Saudi	111 (78%)	28 (20%)	3 (2%)	
Employment	Student	18 (49%)	18 (49%)	1 (2%)	<0.001
	Employed	621 (63%)	327 (33%)	43 (4%)	
Unemployed / Housewife	Retired	826 (71%)	303 (26%)	29 (3%)	<0.001
	<5,000	98 (68%)	40 (28%)	7 (4%)	
Monthly income (SAR)	5,000-10,000	768 (70%)	293 (27%)	29 (3%)	<0.001
	10,000-15,000	405 (69%)	164 (28%)	18 (3%)	
>15,000	Education level	189 (61%)	109 (35%)	10 (4%)	<0.001
	Up to Intermediate	201 (58%)	122 (35%)	23 (7%)	
High School / Diploma	Bachelor's degree	234 (74%)	79 (25%)	5 (1%)	<0.001
	Postgraduate / Doctorate	621 (71%)	227 (26%)	31 (3%)	
Region	Northern	580 (62%)	311 (34%)	37 (4%)	0.16 ^a
	Southern	128 (62%)	71 (34%)	7 (4%)	
Central	Eastern	103 (75%)	32 (23%)	3 (2%)	0.022
	Western	36 (63%)	18 (32%)	3 (5%)	
No. of children	One	1292 (67%)	567 (30%)	62 (3%)	0.022
	Two	88 (65%)	40 (30%)	7 (5%)	
Three	Four or more	138 (62%)	76 (34%)	10 (4%)	<0.001
	Up to 2 years	291 (63%)	162 (35%)	12 (2%)	
Age first child started brushing	3-4 years	356 (67%)	155 (29%)	19 (4%)	<0.001
	>4 to 6 years	778 (70%)	295 (27%)	39 (3%)	
	Up to 2 years	334 (56%)	251 (42%)	15 (2%)	<0.001
	3-4 years	607 (69%)	250 (28%)	22 (3%)	
>4 to 6 years		622 (73%)	187 (22%)	43 (5%)	

Table 7: Association of demographic variables with “How would you rate your overall dental health?”, n (%)

Variable	Category	Excellent	Good	Acceptable	p
Gender	Male	299 (54%)	162 (29%)	90 (17%)	0.92
	Female	983 (55%)	516 (29%)	281 (16%)	
Age (years)	18-30	212 (61%)	96 (28%)	40 (11%)	0.014
	31-40	596 (56%)	303 (28%)	166 (16%)	
41-50	>50	362 (52%)	203 (29%)	133 (19%)	0.27
	Married	112 (51%)	76 (34%)	32 (15%)	
Marital status	Divorced / Widowed	1190 (55%)	624 (29%)	336 (16%)	0.20
	Nationality	92 (51%)	54 (30%)	35 (19%)	
Nationality	Saudi	1214 (55%)	629 (29%)	346 (16%)	0.002
	Non-Saudi	68 (48%)	49 (35%)	25 (17%)	
Employment	Student	25 (68%)	7 (19%)	5 (13%)	<0.001
	Employed	587 (59%)	275 (28%)	129 (13%)	
Unemployed / Housewife	Retired	591 (51%)	352 (30%)	215 (19%)	<0.001
	<5,000	79 (54%)	44 (30%)	22 (16%)	
Monthly income (SAR)	5,000-10,000	548 (50%)	331 (31%)	211 (19%)	<0.001
	10,000-15,000	325 (55%)	177 (30%)	85 (15%)	
>15,000	Education level	190 (62%)	76 (25%)	42 (13%)	<0.001
	Up to Intermediate	219 (63%)	94 (27%)	33 (10%)	
		57 (18%)	78 (25%)	49 (15%)	

	High School / Diploma	112 (13%)	286 (33%)	82 (9%)	
	Bachelor's degree	124 (13%)	264 (28%)	104 (11%)	
	Postgraduate / Doctorate	65 (32%)	50 (24%)	12 (6%)	
Region	Northern	13 (9%)	47 (34%)	19 (14%)	0.31
	Southern	13 (23%)	10 (18%)	8 (14%)	
	Central	294 (15%)	558 (29%)	195 (10%)	
	Eastern	14 (18%)	22 (28%)	11 (14%)	
	Western	24 (18%)	41 (30%)	14 (10%)	
No. of children	One	34 (15%)	74 (33%)	13 (6%)	<0.001
	Two	91 (20%)	114 (25%)	47 (10%)	
	Three	75 (14%)	158 (30%)	55 (10%)	
	Four or more	158 (14%)	332 (30%)	132 (12%)	
Age first child started brushing	Up to 2 years	130 (22%)	148 (25%)	38 (6%)	<0.001
	3-4 years	145 (16%)	250 (28%)	79 (9%)	
	>4 to 6 years	83 (10%)	280 (33%)	130 (15%)	

^aFisher exact test. Percentages in Tables 5-7 are reproduced as reported in the source data.

Discussion:

Parental knowledge plays a central role in determining children’s oral-health outcomes because parents are primarily responsible for establishing daily oral-hygiene routines, making dietary choices and seeking professional dental care [6]. In the present study, parental knowledge and opinions regarding preschool children’s oral health varied according to socio-demographic characteristics, particularly educational attainment and household income. The findings suggest that improving parental knowledge may contribute to earlier adoption of appropriate preventive practices and better oral-health outcomes among preschool children. Parental perceptions and individual characteristics can substantially influence how caregivers recognize and respond to their children’s oral-health needs [7]. In the present study, mothers constituted the majority of respondents, highlighting their prominent caregiving role in early childhood. However, the limited participation of fathers may reduce the generalizability of the findings and suggests the need for greater involvement of both parents in oral-health education. Engaging fathers alongside mothers may facilitate shared responsibility for toothbrushing, dietary supervision and regular dental attendance. Despite generally favorable attitudes toward children’s oral health, important knowledge gaps were identified regarding fluoride-containing toothpaste, appropriate timing of sugary snacks, toothbrushing practices and parental positioning during brushing [8]. These gaps are clinically relevant because inadequate knowledge may prevent parents from implementing evidence-based preventive measures during the period when children are particularly vulnerable to early childhood caries. Strengthening parents’ understanding of these practices could therefore support earlier and more consistent preventive behaviors. The association between education and oral-health knowledge observed in this study is consistent with evidence that higher educational attainment improves parents’ understanding and adoption of appropriate oral-health practices [9]. In the present study, knowledge and opinion scores increased progressively with educational level, with parents having postgraduate education showing higher scores than those with intermediate education. Education may improve parents’ ability to understand health information, evaluate recommendations and translate knowledge into daily practices. Household income also showed a significant relationship with oral-health knowledge. Parents with higher monthly incomes

demonstrated better knowledge and opinion scores than those in the lowest income category. Socioeconomic circumstances may influence access to dental services, preventive products and reliable health information, thereby indirectly affecting oral-health knowledge and practices [10]. However, because there is no standardized definition of low income in Saudi Arabia, the operational threshold of ≤5,000 SAR used in this study should be interpreted cautiously when comparing findings with other populations. Healthcare professionals represent another important avenue for improving parental knowledge. Dentists, paediatricians and family physicians can provide timely and reliable information regarding tooth eruption, fluoride use, feeding practices and the appropriate timing of the first dental visit [11]. Integrating oral-health counseling into routine pediatric and primary healthcare encounters may therefore provide an effective strategy for reaching parents before preventable disease develops. Overall, the findings indicate that parental education should be tailored according to educational and socioeconomic differences. Accessible and culturally appropriate interventions targeting both mothers and fathers may improve knowledge, strengthen preventive behaviors and ultimately contribute to reducing ECC among preschool children in Saudi Arabia [12-15].

Conclusion:

Parental education and income were the main determinants of oral-hygiene knowledge for preschool children in Saudi Arabia. Future efforts should therefore target parents with lower educational attainment and incomes below 5,000 SAR, using tailored educational materials, simplified communication and community-based workshops to reduce knowledge gaps. Public-health authorities could reinforce this with awareness campaigns emphasizing regular dental check-ups regardless of socioeconomic status.

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Conflict of interest:

The authors declare that they have no conflict of interest.

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