

Evaluating Parental Knowledge and Awareness of Oral Care for Preschool Children in Kuantan, Pahang

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ABSTRACT

Background: Good oral health is an essential component of general health. Children's dental health, in general, is greatly influenced by their oral health. Parents significantly influence their children's lives and motivate them to maintain good dental health. This study aims to determine the parents' knowledge and awareness of preschoolers' oral care in Kuantan, Pahang.

Methods: A quantitative cross-sectional survey design was used to evaluate parents' knowledge and awareness of preschool oral care in Kuantan, Pahang. A total of 134 parents who have children aged between 4 and 6 years old at the registered kindergarten with the Department of Social Welfare that fulfil the inclusion criteria were recruited using the convenience sampling method. Descriptive and correlation statistical analysis were employed in this study. The data was analysed using IBM SPSS Statistic version 28.0

Results: This study reported that most participants were parents of more than 32 years, completed tertiary education level, and had monthly income between RM4,000 – RM10,000, with 53.7%, 70.1%, and 38.8%, respectively. Regarding knowledge level, more than half of parents had high knowledge (73.1%) of children's oral care, and all parents had positive awareness (100%). There is no significant correlation between the level of knowledge and awareness with $r=0.138$ and $p=0.112$.

Conclusion: Educational status may be associated with the knowledge level of children's oral care. However, education may not influence parents' awareness of pre-schooler's children's oral care. Thus, more awareness programmes on children's oral care should be implemented in the community.

Keywords: Awareness; Knowledge; Oral health; Parents; Preschool.

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Article History:

Submitted: 26 October 2023
Revised: 26 November 2023
Accepted: 27 November 2023
Published: 30 November 2023

DOI: 10.31436/ijcs.v6i3.332
ISSN: 2600-898X

INTRODUCTION

Good oral health is essential for general health at any age of life, especially for preschool children as a preventive measure for early childhood caries (1). Health significantly influences children's dental health in general. Maintenance and preventive actions should be begun before the first tooth's emergence. Parents significantly influence their kids' lives and oversee motivating them to take better care of their teeth (2). Parents' knowledge and awareness of their children's oral health are crucial components that foster prevention and build a strong oral health status for kids. Additionally, parents need more knowledge and awareness of their oral health to impact children's future attitudes and behaviours into adulthood (3). Many studies globally reported that parents had moderate knowledge of their children's oral health (1,2).

Commonly, parents received advice on dental health from their primary care doctors, dentists, friends, and family. Parents frequently ask questions regarding a child's nutrition, the amount of sugar they consume, the frequency and timing of tooth brushing, when they will next visit the dentist, and when their teeth will start to erupt. It is commonly notable that children whose parents did not maintain proper oral hygiene had a higher incidence of dental caries (2a). Early childhood caries and other local infections are more likely to occur in families with parents who have inadequate dental knowledge and attitudes toward oral health. To prevent dental caries and other related dental issues, promotion and awareness of dental health are essential (4).

Khuzaimah et al. stated that the burden of untreated dental caries has remained relatively unchanged over the past 30 years despite the declining prevalence reported in many countries (5). In Malaysia, caries prevalence is relatively high at 88.9% in adults, 33.3% in 12-year-old children, and 71.3% in 5-year-old children (6). Strategies for oral care disease prevention and promotion must be incorporated into parents' knowledge, through professional training programmes to guide their children on proper oral care as early as suitable age.

METHODS

The quantitative cross-sectional study was conducted from March to April 2023 to evaluate the knowledge and awareness of preschool oral care among parents in Kuantan, Pahang. Convenience sampling was employed to recruit samples from ten registered kindergartens in Kuantan that were willing to participate. The sample size was calculated using the Raosoft Sample Size Calculator with a margin error of 5%, a confidence interval of 95% and a response distribution of 50%. The recommended sample size was 150 respondents.

The questionnaire used in this study consists of three parts. Part A consisted of sociodemographic characteristics, including age, educational level, monthly income level, and marital status. Part B consisted of the level of knowledge; this part consisted of 10 questions on the knowledge of participants on preschool oral care that were used to respond to correct and incorrect answers. Knowledge was assessed by asking ten questions focusing on knowledge of children's oral care. Each response was scored as correct or incorrect. The scoring range of the questionnaire was 10 (maximum) to zero (minimum). The level of knowledge was categorised into three levels, which were the low level of knowledge scale, which was scored from 0 to 3; the medium level of knowledge scored from 4 to 6; and the high level of knowledge, scored from 7 to 10. The level of awareness was covered in Part C. This section included ten questions about participants' awareness of preschool oral care, to which they were asked to respond using a "yes" or "no" or "do not know" scale. Scores ranging from 0 to 3 indicated low awareness, 4 to 6 indicated medium awareness, and 7 to 10 indicated high awareness (7). The questionnaire was adopted from the study by Hamasha et. Al (7), and a pilot study was done to identify the reliability and consistency of implementation in the Malaysian setting. The Cronbach's alpha was 0.70 (≥ 0.60), an acceptable value.

The descriptive analysis was employed to analyse the socio-demographic characteristics of the participants, and a correlation test was used to analyse the correlation between the level of knowledge and awareness of preschool

oral care among participants. The p-value at 0.05 (2-tailed) determined significant value. All data were analysed using IBM SPSS Statistic version 28. This study obtained ethical approval from Kuliyah of the Nursing Postgraduate Research Committee (KNPGRC) and IIUM Research Ethics Committee (IREC) (IREC 2023-KON/NURF16). The consent form was distributed, and confidentiality was ensured before data collection.

RESULTS

Sociodemographic data

The current study received a response rate of 89.3% from 134 participants. The study findings showed that the highest age group of the participants was more than 32 years old, with 53.7%, and the lowest age group was 18 to 22 years old, with only 9.7%. Regarding the educational level, the majority of the participants completed tertiary (university) level of education (70.1%), followed by secondary level and primary level with 23.1% and 6.7%, respectively. More than 50% of participants earned household income between RM2,500 to RM4,000. All data is summarised in **Table 1**.

Table 1: The sociodemographic characteristics of participants (N=134)

Characteristics	Variables	Frequency (n)	Percentage (%)
Age	18-22 years old	13	9.7
	23-27 years old	22	16.4
	28-32 years old	27	20.1
	More than 32 years old	72	53.7
Education Level	Does not go to school	0	0
	Primary	9	7.0
	Secondary	31	23.0
	University	94	70.0
Monthly Income Level	Low (less than 2,500)	69	51.5
	Medium (4,000-10,000)	52	38.8
	High (more than 10,000)	13	9.7
Marital Status	Married	130	97
	Divorce	4	3

The level of knowledge on preschool children's oral care

Table 2 shows the tabulation of responses by participants based on individual items. There were ten items related to oral care, including the number of primary teeth when all erupted, the ideal duration of brushing your teeth,

changing the child's toothbrush, the best age for the child's first dental visit, the meaning of plaque, the meaning of calculus, important of fluoride toothpaste, the effect of plaque, primary problem, and knowledge on child's oral health to the general health. Overall, most of the participants answered correctly.

Table 2: Descriptive per item of parental knowledge on preschool children's oral care (N= 134)

Knowledge variables	Frequency (n)	Percentage (%)
Q.1 What is the number of primary teeth when all erupted?		
12	13	9.7
16	53	39.6
20	68	50.7
Q2. What is the ideal duration of brushing your teeth?		
Few seconds	4	3.0
1 minute	31	23.1
2 minutes	66	49.3
3 minutes	33	24.6
Q.3 How often do you change your child's toothbrush?		
Every 1 month	41	30.6
Every 3 months	89	66.4
Every 1 year	4	3.0
No need to change it	0	0
Q4. What is the best age for your child's first dental visit?		
At birth	1	0.7
6 months - 1 year of age	100	74.6
After six years of age	29	21.6
When feeling pain	4	3.0
Q5. What does plaque mean?		
Soft deposits	56	41.8
Hard deposits	65	48.5
I don't know	13	9.7
Q.6 What does calculus mean?		
Soft deposits	37	27.6
Hard deposits	56	41.8
I don't know	41	30.6
Q.7 What is the importance of adding fluoride to toothpaste?		
Prevent caries	104	77.6
Whiten the teeth	15	11.2
Clean the mouth	11	8.2
I don't know	4	3.0
Q8. How does the plaque affect the mouth?		
It causes gum disease	62	46.3
It causes bad breath	45	33.6
It causes discoloration	17	12.7
I don't know	10	7.5
Q9. Do primary teeth problems have an effect on permanent teeth?		
Yes	87	64.9
No	30	22.4
I don't know	17	12.7
Q10. Do you think the child's oral health affects his general health?		
Yes	128	92.5
No	8	6.0
I don't know	2	1.5

Table 3 shows the level of knowledge of preschool children's oral care. The knowledge scores were categorised as low knowledge (score 0-3), medium knowledge (score 4-6), and high knowledge (score 7-10). The current study

revealed that most participants had high knowledge of preschool children's oral care 73.1%, medium knowledge (26.1%) and low knowledge (0.8%).

Table 3: Level of knowledge on children's oral care (N= 134)

Level of knowledge	Total score	Frequency (n)	Percentage (%)
Low knowledge	0-3	1	0.8
Medium knowledge	4-6	35	26.1
High knowledge	7-10	98	73.1

The level of awareness of children's oral care

Table 4 describes the response on parental awareness per individual item. The finding shows that parental awareness is good for

preschool children's oral care, with most participants answering correctly. This finding revealed that most parents had children's oral care awareness, and all participants answered correctly for Q2 and Q3 (100%).

Table 4: Descriptive per item of parental awareness on preschool children's oral care (N= 134)

Awareness Items	Frequency (n)	Percentage (%)
Q1. Opinion about your children's teeth and gum's health.		
Good	13	9.7
Bad	121	90.3
Q2. Is it necessary to maintain your children's teeth and gums in good condition?		
Yes	134	100
No	0	0
Q3. Does regular cleaning keep your children's teeth and gums in good condition?		
Yes	134	100
No	0	0
Q4. Do you worry about the colour of your children's teeth?		
Yes	106	79.1
No	28	20.9
Q5. Have you noticed some yellowish or white sticky deposits on your children's teeth?		
Yes	98	73.1
No	36	26.9
Q6. Do your children know the right method of cleaning their teeth?		
Yes	117	87.3
No	17	12.7
Q7. Do your children clean their teeth twice more on a daily basis?		
Yes	109	81.3
No	25	18.7

Q8. Do you know the cause of tooth decay in children?		
Yes	124	92.5
No	10	7.5
Q9. Do you feel the need for your children to visit the dentist?		
Yes	132	98.5
No	2	1.5
Q10. Do your children follow the advice the dentist has given for their teeth and gums?		
Yes	116	86.6
No	18	13.4

The result in **Table 5** shows participants' level of awareness on oral care for preschool children. The level of awareness was categorised into three levels, which were low level of awareness (score 0-3), medium level of

awareness (score 4-6) and high level of awareness (score 7-10). Surprisingly, the result showed that all participants knew preschool children's oral care.

Table 5: Level of awareness on preschool children's oral care (N=134)

Variables	Total score	Frequency (n)	Percentage (%)
Level of awareness			
Low awareness	0-3	0	0
Medium Awareness	4-6	0	0
High awareness	7-10	134	100

The association between the level of knowledge and level of awareness

The findings in **Table 6** showed no significant correlation between the level of knowledge and

awareness related to preschool children's oral care among parents in Kuantan, Pahang, with a p- 0.112 (r=0.138). Therefore, the participants' knowledge scores may not influence their awareness.

Table 6: Association between level of knowledge and level of awareness (N=134)

Pearson correlation		Level of knowledge	Level of awareness
Level of knowledge	Correlation Coefficient	1	0.138
	Sig. (2-tailed)	-	0.112
	N	134	134
Level of awareness	Correlation Coefficient	0.138	1
	Sig. (2-tailed)	0.112	-
	N	134	134

** Correlation is significant at the 0.05 level (2-tailed)

DISCUSSION

Sociodemographic characteristics

The current study was conducted among 134 parents who were recruited as participants to evaluate their knowledge and awareness of

preschool children's oral care. The study found that the majority of the parents are more than 32 years old and have completed tertiary education. This indicates that most of the participants were young, with children aged between four and six years old. This study also found that more than 50% earned household

income below RM2,500, and 38.8% earned between RM4,000 and RM10,000. This study shows that most participants were under the B40 population (household income below RM3,000).

Level of knowledge and awareness on preschool children's oral care

The study evaluating parents' level of knowledge on their preschool children's oral care noted that ten items were asked, such as 'Q1. The number of primary teeth when all erupted', 'Q2. Ideal duration of brushing teeth', 'Q3. Duration to change the toothbrush', 'Q4. Best age for first dental visit', 'Q5. What does plaque mean?', 'Q6. What does calculus mean?', 'Q7. What is the importance of adding fluoride to toothpaste?', 'Q8. How does the plaque affect the mouth?', 'Q9. Do primary teeth problems have an effect on permanent teeth?' and 'Q10. Do you think the child's oral health affects his general health?' illustrated parent understanding. The majority (73.1%) of the participants scored high level of knowledge, medium level (35%), and low level of knowledge, which were 0.8%. The finding is similar to the study by Nordin et al. (2019) that the participants' knowledge of oral health was high (62.5 %) compared to the medium and low levels, which were evaluated at 20.4 % and 17.1 %, respectively (4,7). Similar findings indicate that most parents had good literary and oral care for their children (8,9).

The study evaluating parents' level of awareness on their preschool children's oral care noted that ten items were asked, such as 'Q1. Opinion about your children's teeth and gum's health', 'Q2. Is it necessary to maintain your children's teeth and gums in good condition?', 'Q3. Does regular cleaning keep your children's teeth and gums in good condition?' 'Q4. Do you worry about the colour of your children's teeth?' 'Q5. Have you noticed some yellowish or white sticky deposits on your children's teeth?', 'Q6. Do your children know the right method of cleaning their teeth?' 'Q7. Do your children clean their teeth twice more on a daily basis?' 'Q8. Do you know the cause of tooth decay in children?', 'Q9. Do you feel the need for your children to visit the dentist?' 'Q10. Do your children follow the advice the dentist has given for their teeth and gums?'. Surprisingly, all the participants in this study had high awareness scores (Table 5). Nevertheless, this finding contradicts a study

done by Trinaina Somas Kandhan et al. (2020), as almost 70% of the participants were not aware of the need to maintain good oral hygiene for their overall health, suggesting that people are not sufficiently aware of the value of maintaining good oral hygiene (10,11). This noticeably showed that parents in Kuantan, Pahang, may endeavour to use their knowledge of children's oral care for their efforts in shaping a better future for their children, as it is crucial starting from the age of preschool.

The relationship between the level of knowledge and awareness of preschool children's oral care

This study found a weak correlation between the level of knowledge and awareness of preschool children's oral care with an *r*-value of 0.138. The finding revealed no significant difference between the two variables investigated, with a *p*-value of 0.112. This study revealed that the participants' knowledge may not associated with their awareness. This finding contradicts the study by Saraf et al. (2023) and Adil et al. (2020) that there was a positive correlation between knowledge, educational status, and awareness of oral care (12,13). Previous studies also supported these findings that there was a strong correlation between parents' knowledge and awareness of dental caries and their children's oral care (14,15). These findings show that knowledge and awareness are vital in managing specific problems for good outcomes such as carries prevention, gums problems and finally, for good oral health.

CONCLUSION

This cross-sectional study sought to ascertain the level of knowledge and awareness among parents in Kuantan, Pahang, regarding the oral care of preschool children and the association between level of knowledge and awareness. This study was conducted among 134 parents in Kuantan, Pahang. The current study found that most parents in Kuantan, Pahang, had a high level of knowledge (73.1%) on children's oral care, and all participants had good awareness. Nevertheless, there was no significant association between the level of knowledge and awareness of children's oral care among parents in Kuantan, Pahang.

To conclude, parents have a high knowledge and awareness of preschool children's oral care.

This may be due to most parents having completed tertiary education level. However, continuous education and awareness on preschool children's oral care should be continued as prevention and alarming on current eating habits and food intake trends.

ETHICAL CONSIDERATION

The International Islamic University Malaysia Research Ethics Committee (IREC) (IREC 2021-KON/UG06) and Kulliyyah of Nursing Post Graduate Research Committee (KNPGR) of IIUM have given their clearance for this work. The questionnaire included details about the researcher's identity, the study's goals, the respondents' confidentiality, and their right to decline or leave the study. The respondent was promised that their identity would stay hidden.

FUNDINGS

The study receives no funding.

ACKNOWLEDGEMENT

The researchers would like to express their gratitude to all participants and all the kindergarten's owners for the permission and support to ensure this study has been completed.

CONFLICT OF INTEREST

The Author(s) declares that there is no conflict of interest.

AUTHOR CONTRIBUTIONS

NDFA: involved in data collection, analysis of the data, support with literature content and drafting of the manuscript.

HH: Involved in data analysis, support with literature content, drafting the manuscript, finalising the manuscript, submission of the manuscript and final process of the publication.

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