

## Mother's Knowledge regarding the Functions of Children's Primary Teeth in Salapian District, Langkat-North Sumatera

(Pengetahuan Ibu mengenai Fungsi Gigi Sulung Anak di Kecamatan Salapian-Langkat, Sumatera Utara)

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### Abstract

Primary teeth play a role in mastication, speech function, and appearance, as well as serve as a provider of space for children's permanent teeth. This indicates that mothers need to understand these functions to increase their willingness for dental care. Therefore, this study aims to determine the relationship of mothers' knowledge about the functions of children's primary teeth with the number of children and the level of education in Salapian District, Langkat. This is an analytical study with a cross-sectional design, and the sample population consists of 30 prospective mothers, as well as 30 and 40 mothers with one and more than one child, respectively. Data were collected using the interview technique and the analytical test used was the Kruskal Wallis test with a significance value of  $p < 0.05$ . The results showed that 15 respondents (15%) had a good level of knowledge, 36 (36%) were in an insufficient category, and 49 respondents (49%) were in a less category. Statistical analysis showed that there is a significant relationship between mother's knowledge about children's primary teeth functions, the number of children, and education level ( $p = 0.001$  and  $p = 0.001$ ). Mothers with many children have a better knowledge about the functions of primary teeth than others with few children. The result also showed that mothers with higher education levels are more knowledgeable than those with primary and secondary education.

**Keywords:** mother's knowledge, functions of primary teeth, education level, number of children

### Abstrak

Gigi sulung berperan untuk pengunyahan, fungsi bicara, penampilan, dan sebagai penyedia ruang bagi gigi permanen anak. Sangat penting bagi ibu untuk mengetahui fungsi gigi sulung anak agar bersedia melakukan perawatan gigi anaknya. Tujuan penelitian ini untuk melihat hubungan antara tingkat pengetahuan ibu dan calon ibu mengenai fungsi gigi sulung anak dengan jumlah anak dan tingkat pendidikan di Kecamatan Salapian, Langkat-Sumatera Utara. Penelitian ini merupakan penelitian analitik dengan rancangan *cross-sectional*. Subjek penelitian sebanyak 100 orang yaitu 30 orang calon ibu, 30 orang ibu yang memiliki satu orang anak, dan 40 orang ibu yang memiliki lebih dari satu orang anak. Pengambilan data dilakukan dengan teknik wawancara dan uji analisis yang digunakan yaitu uji *Kruskal Wallis* dengan nilai kemaknaan  $p < 0,05$ . Hasil penelitian menunjukkan tingkat pengetahuan ibu dan calon ibu yang baik mengenai fungsi gigi sulung anak sebanyak 15 responden (15%), 36 responden (36%) kategori cukup, dan 49 responden (49%) kategori kurang. Analisis statistik menunjukkan ada hubungan yang bermakna antara tingkat pengetahuan ibu dan calon ibu mengenai fungsi gigi sulung anak terhadap jumlah anak dan tingkat pendidikan ibu ( $p = 0,001$  dan  $p = 0,001$ ). Disimpulkan ibu yang mempunyai banyak anak memiliki tingkat pengetahuan lebih baik mengenai fungsi gigi sulung dibandingkan dengan calon ibu maupun ibu dengan satu orang anak, serta ibu dengan tingkat pendidikan tinggi memiliki tingkat pengetahuan yang lebih baik dibandingkan dengan ibu yang berpendidikan dasar maupun menengah.

**Kata kunci:** tingkat pengetahuan ibu, fungsi gigi sulung, tingkat pendidikan, jumlah anak

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## INTRODUCTION

Mothers are the primary caregivers and decision-makers in caring for their children's primary teeth. Many parents believe that the primary teeth are only temporary and are later replaced by permanent teeth. Consequently, they often feel that damage to the organ is not a problem.<sup>1</sup> Duruk (2020) revealed that 6.7% of parents lacked knowledge about the permanent first molar, while 60% do not know that the first molar is a permanent tooth in the maxilla and mandible. A total of 7.3% are not knowledgeable about the teeth in the mandible, while 43% know that the primary molars were permanent.<sup>2</sup> Primary teeth play a role in mastication, speech function, appearance, and they serve as a provider of space for children's permanent teeth.<sup>3</sup> The occurrence of dental caries in children has several negative impacts including difficulty in mastication, which leads to reduced nutritional intake, incorrect pronunciation of some letters, difficulty sleeping, frustration due to toothache, and reduced playing time for children.<sup>4,5</sup> Primary teeth extracted prematurely cause the extraction space to narrow. This condition can lead to a lack of space for permanent teeth to erupt, thereby causing crowding of the dentition.<sup>6</sup> Therefore, it is essential for mothers to know the functions of their children's primary teeth, which is expected to increase the attention given to dental care.<sup>7</sup>

Setty's in Bengaluru, India revealed that only 39% of parents are knowledgeable about the entire functions of primary dentition.<sup>7</sup> Another study stated that only 10% think that dental care is necessary to eat properly. Furthermore, 12% believes it helps to build children's self-confidence, while 4% think it has aesthetic importance.<sup>8</sup> Krishnan et al. (2019) reported that 72.9% of mothers believe their children's primary teeth do not need treatment because they are often extracted.<sup>9</sup> Shinde et al. (2018) stated that only 18% had good knowledge about scheduling their child's first dental visit.<sup>10</sup>

Parents or mothers' lack of knowledge about the functions of primary teeth can make them pay less attention to children's dental care, which often lead to oral health problems. The occurrence of dental caries in early childhood can affect the condition of the teeth and mouth in the future. Children with this condition are 5-6 times more at risk of forming new lesions than others.<sup>11</sup> Octiara E et al. (2019) in Medan stated that the prevalence of caries in children aged  $\leq 3$  years was 47.06%. A previous study revealed that dental problems in early childhood are related to poor oral hygiene practices.<sup>12</sup> The incidence of caries can be reduced if parents emphasize the importance

of their children's oral hygiene and routinely take them to the dentist every six months.<sup>13</sup> Prospective mothers who are about to have their first child must also be educated about dental and oral health in children. This is expected to help them provide diets, maintain good and correct dental and oral hygiene. Almoudi et al. (2016) reported that only 27.5% of prospective mothers were prepared to start preventive oral health care for their child.<sup>14</sup> Therefore, this study aims to determine the relationship of mothers' knowledge about the functions of children's primary teeth with the number of children and the level of education in Salapian District, Langkat-North Sumatera, Indonesia.

## MATERIALS AND METHODS

**Research design.** This is an observational analytical study, which was carried out in Salapian District, Langkat with a cross-sectional design. Sample population. The sample population contains 100 people who were selected with a purposive sampling technique. They consist of 30 prospective mothers (pregnant woman with no child), 30 mothers with one child aged  $\leq 3$  years, and 40 mothers with more than one child but has one child aged  $\leq 3$  years. Research group. Education level was divided into three groups, namely primary (elementary, junior high, equivalent), secondary (senior high, equivalent), and higher (College graduate) categories.

**Ethical clearance.** This study was approved by The Research Ethics Committee of the Universitas Sumatera Utara with reference number 627/KEP/USU/2021. **Data collection.** Data were collected using the interview technique with 13 multiple choice questionnaires. The correct answer for seven questions has a maximum score of one. The remaining six questions has more than one answer, consisting of one question with a maximum score of one, four questions with a maximum score of two, and one question with a maximum score of three. The total maximum score for all the questions was 19. The scores obtained for the level of knowledge were categorized based on the method proposed by Arikunto (2006)(Table 1).<sup>15</sup>

**Data analysis.** The analytical test used was the Kruskal Wallis test with a significance value of  $p < 0.05$  to determine the relationship of mother's knowledge about the functions of children's primary teeth with the number of children and the level of education.

## RESULTS

The results showed that 48%, 30%, and 22% of the respondents were in the secondary, higher, and primary education categories, as shown in Table 2.

Furthermore, 96% of them stated that the function of primary teeth was to chew food, as shown in Table 3. The results also showed that only 18.1% of the respondents knew that their teeth were filled at the dentist to prevent cavities from expanding in the primary carious teeth, while 12% knew the schedule of their child's first visit to the dentist, as shown in Table 3.

A total of 15%, 36%, and 46% of the respondents have good, sufficient, and less knowledge, respectively. Statistical analysis using the Kruskal Wallis test showed that there is a significant relationship between mothers' knowledge and the number of children ( $p=0.001<0.05$ ). Furthermore, mothers with >1 child have the best knowledge than those with one child or pregnant women, as shown in Table 4.

The statistical analysis also showed that there is a significant relationship between knowledge about dental growth and the education level ( $p=0.001<0.05$ ). Mothers with higher education levels are more knowledgeable, as shown in Table 5.

## DISCUSSIONS

The results showed that only 15% of mothers had a good level of knowledge about the functions of their children's primary teeth, as shown in Table 3. The percentage obtained was lower compared to Chandran's (2019)<sup>16</sup> who recorded 44.6%, while the remaining 55.4% had less knowledge. Similar results were also obtained by Setty's (2016)<sup>7</sup> who revealed that only 39% of the parents were aware of all the functions of primary teeth. Meanwhile, Narayanan (2017)<sup>17</sup> stated that 83% of parents believe primary teeth play an essential role for their children. Ramakrishnan (2019)<sup>8</sup> reported that 53% considered it essential to take care of the organ to maintain the functions.

Based on the category of the number of children, mothers who have the best knowledge about the functions of primary teeth had more than one child, and they account for 22.5% of the respondents, as shown in Table 4. This finding is inconsistent with Chandran's (2019), where the number of children in the family did not affect the level of parental knowledge ( $p = 0.979$ ).<sup>16</sup> Furthermore, the result showed that prospective mothers have less knowledge about the functions of the primary teeth, and they accounted for 6.7% of the respondent, as shown in Table 4. One of the factors affecting level of knowledge is experience. Mothers with children are more

knowledgeable compared to others with no previous children due to previous experience. However, it is not enough to increase the knowledge, which indicates that it is necessary to provide better education regarding the function of the child's primary teeth before birth. This is expected to encourage mother to be more willing to take care of their children's dental health early.<sup>15</sup>

The results showed that mothers with higher education level have better knowledge compared to others with lower education level (36.7% vs 6.3% vs 4.6%), as shown in Table 5. Another study revealed that there was a significant relationship between parents' knowledge and their education level ( $p<0.001$ ).<sup>16</sup> Education is a lesson given by someone to others to understand what they learned. The higher a person's education level, the easier it is to access and understand information, including knowledge about children's dental and oral health, which can improve their quality of life.<sup>9</sup>

The question with the highest number of the correct answer was that decayed primary teeth can not affect the general health of the children, and this accounted for 71% of the responses, as shown in Table 3. This is probably because mothers tend to pay attention to things that happen early in the child's life. They are also often aware of changes in their children, such as physical changes, habits, and health. The mother then becomes more aware about difficulty and reduced eating due to toothache. These results are in line with Duguma (2018), where 73.3% of 262 parents answered correctly that damaged primary teeth can affect the general health of children.<sup>18</sup> Suratri (2014) also reported that 51% of those who answered correctly complained of loss of appetite and growth.<sup>19</sup>

The lowest number of the correct answer was about the schedule for the child's first visit to the dentist, where only 12% of mothers answered correctly, that the first visitation was at the age of 1 year, as shown in Table 3. These findings are in line with Shinde (2018)<sup>10</sup> that only 18% of mothers know the schedule, while Manohar (2017)<sup>20</sup> obtained 10%. This study showed that only 55% knew the frequency of visits to the dentist, namely every six months, as shown in Table 3. The level of knowledge about regular visitation is better than that of the child's first visit. This knowledge is good because there is a lot of information about regular sessions with the dentist, which are been advertised through various media, such as television. These advertisements help mothers remember that their children must be taken to the dentist every 6 months. This study's results are in

line with Sehwat's (2016), where 64.7% of mothers think that it is necessary to bring their children for regular dental visits.<sup>21</sup>

Primary teeth with caries must be restored immediately because it can worsen when left unchecked.<sup>6</sup> This study's result revealed that 62% of mothers answered most question correctly that it is necessary to take care of their damaged primary teeth even though they did not complain of pain, while 18.1% filled their teeth at the dentist and the cavities did not expand, as shown in Table 3. These findings are inconsistent with Krishnan's (2018)<sup>9</sup>, where 72.9% of mothers stated that their primary teeth do not need treatment because they are expected to fall out. The result of this study are in line with Duguma (2018)<sup>18</sup>, where 59.5% of parents chose to restore primary teeth. This result showed that the level of knowledge on the functions of their children's primary teeth was not very good. Therefore, there are still many incidents of premature loss in children due to lack of care. Many parents in this study prefer tooth extraction for their primary teeth because it does not require repeated visits, thereby saving time and money. Mamonto in Bailang (2014) showed the large influence of parental knowledge on the incidence of early tooth loss in children, where 90% of children experienced early loss of primary teeth in the upper jaw and 66% in the lower jaw.<sup>3</sup> Hanindira (2020) also reported that 18.5% prevalence rate of premature loss.<sup>22</sup>

The inadequate knowledge of mothers about oral and dental health can lead to a high incidence of caries in children, thereby increasing the potential for tooth loss. Loss of primary dentition before replacement by permanent teeth eruption can cause a shift in the arrangement of teeth in the dental arch. This study's result revealed that more than 50% of mothers did know that damaged primary teeth can cause crowded permanent teeth, while only 43% were knowledgeable. Furthermore, several parents believe that permanent teeth are replaced by primary dentition, hence, they do not need treatment. Health wor-

kers must change this belief by providing knowledge in the form of dental health counseling to mothers, especially prospective mothers. This is very useful in preventing abnormalities in the child's primary teeth in the future.

In this study, the main functions of the primary teeth known by most mothers were to chew food (96%), facilitate the child's pronunciation in speech (73%), affect appearance (67%), and maintain space in the dental arch for permanent teeth to grow (52%). Similar findings were also obtained by previous studies where the functions include chewing food (85%), facilitating children's pronunciation in speech (55%), affecting appearance (66%), and maintaining space in the permanent dental arch (48%).<sup>7</sup> Based on the results, 56% of mothers knew that damaged primary teeth affected the child's environment. Furthermore, most of the answers obtained include children were often fussy (85.7%), lazy to play (73.2%), as well as lazy to talk and smile due to fear of being ridiculed by their friends (57.1%). A total of 62% of mothers know that damage to the front primary teeth can affect the child's speech, thereby leading to difficulty in pronouncing certain letters (77.4%). The percentage obtained in this study are higher compared to Ramakrishnan's (2019), where only 10% of parents think that primary dental care is necessary to eat properly, 12% believes it helps to build children's self-confidence, while 4% consider it to have aesthetic importance.<sup>9</sup> In Elfarisi (2018)'s study, 8 parents realized that damaged primary teeth affected their children's confidence and they refused to talk due to dental and oral problems.<sup>23</sup>

Based on the results, mothers who have many children had a better level of knowledge about primary teeth functions than prospective mothers and those with one child. Furthermore, respondent with higher education levels had a better level of knowledge compared to others with primary and secondary education.

**TABLES**

Table 1. The scores obtained for the level of knowledge

Good	= 76%-100%	= 76%-100%
Sufficient	= 56%-75%	= 56%-75%
Less	= <56%	= <56%

Table 2. Characteristics of respondents

No	Characteristics	n	%	
1	Mother's status	Prospective mothers	30	30
		Mothers with one child	30	30
		Mothers with more than one child	40	40
2	Mother's education	Primary	22	22
		Secondary	48	48
		Higher	30	30
3	Child age (years)	<1	31	44.29
		1	22	31.43
		>1	17	24.28

Table 3. Distribution of Respondents' Answers regarding the Functions of Children's Primary Teeth

No	Question & Options	Responses in Numbers		Mothers with Number of Children			P	Educational Level			P
		n	%	0	1	>1		Primary	Secondary	Higher	
1	Functions of primary teeth										
	a. Maintain space in the dental arch for permanent teeth to grow	52	52	16	17	19		7	24	21	
	b. Preventing the bad habit of sticking your tongue out where your baby teeth are missing	43	43	8	16	19		8	20	15	
	c. Has no significant function compared to the permanent teeth	0	0	0	0	0	0.02*	0	0	0	0.06
	d. Make it easier for children to pronounce in speech	73	73	17	25	31		13	35	25	
	e. Affects children's appearance	67	67	15	24	28		10	33	24	
	f. Chew food	96	96	28	29	39		21	46	29	
g. Do not know	1	1	0	0	1		1	0	0		
2	Decayed primary teeth need to be treated										
	a. No need because later it will come off as well and be replaced by permanent teeth	17	17	8	2	7		3	11	3	
	b. It needs to be done even if the child does not complain of pain	62	62	13	24	25	0.01*	12	27	23	0.1
	c. Needs to be done if the child has complained of pain	15	15	6	3	6		5	7	3	
	d. Needs to be done if the child complains of repeated pain	6	6	3	1	2		2	3	1	
e. Do not know	0	0	0	0	0		0	0	0		
3	Caring for decayed primary teeth										
	a. Teeth are extracted by dentists so they don't hurt anymore	29	34.9	11	10	8		4	19	6	
	b. Pulling a child's tooth with floss	0	0	0	0	0		0	0	0	
	c. Tooth filling at the dentist so that the hole does not expand	15	18.1	4	4	7		3	4	8	
	d. Telling the child to gargle salt water	16	19.3	2	6	8	0.3	4	6	6	0.08
e. Give pain medication	23	27.7	5	8	10		8	8	7		
4	Decayed primary teeth can affect the permanent teeth										
	a. Yes	55	55	16	17	22	0.8	15	22	18	0.1
	b. No	39	39	10	13	16		6	23	10	
c. Do not know	6	6	4	0	2	1		3	2		

No	Question & Options	Responses in Numbers		Mothers with Number of Children			p	Educational Level			p
		n	%	0	1	>1		Primary	Secondary	Higher	
5	Problems that will arise in the replacement of permanent teeth if the primary teeth are damaged										
	a. Permanent tooth germ will be damaged	23	41.8	8	8	7		7	7	9	
	b. Permanent teeth will grow crowded later	43	78.2	14	13	16	0.8	12	18	13	0.3
	c. Permanent teeth will grow faster or slower	27	49.1	6	11	10		5	11	11	
	d. Permanent teeth will be mobile when they grow	9	16.4	4	3	2		3	6	0	
	e. Do not know	3	5.45	1	1	1		1	2	0	
6	Decayed primary teeth can affect the general health of the child										
	a. Yes	71	71	21	21	29		16	33	22	
	b. No	26	26	8	9	9	0.9	6	13	7	0.8
	c. Do not know	3	3	1	0	2		0	2	1	
7	General health problems that arise from damaged primary teeth										
	a. Decreased appetite so the child's weight goes down	65	91.5	19	19	27		15	30	20	
	b. Children often get sick like fever and cough	40	56.3	12	15	13	0.6	8	20	12	0.8
	c. Child's sleep is disturbed because of toothache	61	85.9	17	18	26		13	29	19	
	d. Do not know	0	0	0	0	0		0	0	0	
8	Decayed primary teeth affect the child's environment										
	a. Yes	56	56	16	18	22		10	25	21	
	b. No	43	43	13	12	18	0.8	12	22	9	0.1
	c. Do know	1	1	1	0	0		0	1	0	
9	The effect of damaged primary teeth on the child's environment										
	a. Children are lazy to talk and smile for fear of being ridiculed by their friends	32	57.1	7	9	16		6	13	13	
	b. Children are lazy to play because of toothache	41	73.2	10	13	18		7	17	17	
	c. Children are often fussy because of toothache	48	8.7	15	16	17	0.6	8	22	18	0.08
	d. Do not know	0	0	0	0	0		0	0	0	
10	Damaged front primary teeth will affect the way a child speaks										
	a. Yes	62	62	16	18	28		10	31	21	
	b. No	35	35	12	11	12	0.3	12	15	8	0.1
	c. Do not know	3	3	2	1	0		0	2	1	
11	Speech problems that arise in children due to damaged front primary teeth										
	a. The child has difficulty pronouncing certain letters	48	77.4	12	14	22	0.4	8	25	15	0.4
	b. The child has difficulty pronouncing all the letters	7	11.3	1	2	4		1	1	5	
	c. The child has difficulty speaking	15	24.2	6	3	6		1	5	9	

No	Question & Options	Responses in Numbers		Mothers with Number of Children			Educational Level			p
		n	%	0	1	>1	Primary	Secondary	Higher	
	d. Do not know	1	1.61	1	0	0	0	1	0	
12	Child's first visit to the dentist									0.7
	a. When your child has a toothache	35	35	11	12	12	7	20	8	0.1
	b. At the age of 1 year	12	12	3	3	6	5	3	4	
	c. When the baby teeth all grow	16	16	2	4	10	2	7	7	
	d. When baby teeth fall out, they will be replaced by permanent teeth	15	15	6	5	4	3	9	3	
	e. At the age of 6 years	14	14	5	4	5	3	6	3	
	f. Do not know	8	8	3	2	3	2	3	3	
13	Regular visits to the dentist									0.8
	a. Every 6 months	55	55	17	15	23	9	23	23	
	b. Once a year	7	7	0	4	3	2	4	1	
	c. Every 2 years	1	1	1	0	0	0	1	0	
	d. Only when the child complains of toothache	32	32	9	10	13	10	17	5	
	E. Do not know	5	5	3	1	1	1	3	1	

\*Kruskal Wallis test, significant (<0.05)

Table 4. Analysis of the Relationship between Mothers and Prospective Mothers' Knowledge regarding the Functions of Child's Primary Teeth on the Number of Children

Level of Knowledge	Mothers with Number of Children						Total		p
	0		1		>1				
	n	%	n	%	n	%	n	%	
Good	2	6.7	4	13.3	9	22.5	15	15	0.001*
Sufficient	4	13.3	16	53.3	16	40	36	36	
Less	24	80	10	33.4	15	37.5	49	49	
Total	30	100	30	100	40	100	100	100	

\*Kruskal Wallis test, significant (<0.05)

Table 5. Analysis of the Relationship between Mothers and Prospective Mothers' Knowledge regarding the Functions of Child's Primary Teeth on the Education Level

Level of Knowledge	Educational Level						Total		p
	Primary		Secondary		Higher				
	n	%	n	%	n	%	n	%	
Good	1	4.6	3	6.3	11	36.7	15	15	0.001*
Sufficient	7	31.8	18	37.5	11	36.7	36	36	
Less	14	63.6	27	56.2	8	26.6	49	49	
Total	22	100	48	100	30	100	100	100	

\*Kruskal Wallis test, significant (<0.05)

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