Research article

KNOWLEDGE LEVEL OF MOTHERS OF CHILDREN AGED 5-9 YEARS ABOUT FIRST PERMANENT MOLARS, 2022

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ABSTRACT

The objective of this study is to identify the knowledge level that mothers of children aged 5 to 9 years have about the eruption and importance of the first permanent molars, considering sociodemographic factors and adhering to established ethical criteria and norms. The study uses a quantitative approach and is of cross-sectional descriptive type. The sample consisted of 245 mothers of children aged 5 to 9 years. Convenience sampling was used for participant selection. The survey technique was employed, and the instrument used was a questionnaire validated by dental professionals specializing in pediatric dentistry, public health, and research. The results indicate that 42.4% of the mothers are aware of which tooth is the first permanent molar. 60.8% believe that if the first permanent molar is extracted, it will not grow back. 65.7% mentioned that the first permanent molar is not the same as the first primary molar. Only 7.8% are familiar with the oral location of the first permanent molar. 32.7% affirm that the loss of the first permanent molar does indeed affect their child. In conclusion, the knowledge level among mothers regarding the importance of the first permanent molar and the consequences of its premature loss is intermediate. Mothers who demonstrated better or higher knowledge were found to be within the age range of 25 to 34 years, with a high school education level, and an income range of 250.00 to 350.00 USD.

Key words: eruption, knowledge level, first permanent molar, primary molar, El Salvador.

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NIVEL DE CONOCIMIENTO DE LAS MADRES DE NIÑOS DE 5-9 AÑOS SOBRE PRIMEROS MOLARES PERMANENTES, 2022

RESUMEN

El objetivo de este estudio fue identificar el nivel de conocimiento que poseen las madres de niños de 5 a 9 años respecto a la erupción e importancia de los primeros molares permanentes según factores sociodemográficos, teniendo en consideración los criterios y normas éticas establecidas. El enfoque del estudio es cuantitativo, tipo descriptivo transversal. La muestra estuvo constituida por 245 madres de niños de 5 a 9 años. El tipo de muestreo es por conveniencia; la técnica utilizada fue encuesta, y el instrumento fue el cuestionario, el cual fue validado por profesionales de odontología del área de odontopediatría, salud pública e investigación. Los resultados indican que el 42.4 % de las madres conocen cuál es el primer molar permanente. El 60.8 % consideran que si se extrae el primer molar permanente no volverá a salir. El 65.7 % mencionan que no es igual el primer molar permanente que el primer molar primario. 7.8 % conocen la ubicación en boca del primer molar permanente. El 32.7 % afirma que sí afecta a su niño la pérdida del primer molar permanente. En conclusión, el nivel de conocimiento de las madres sobre la importancia del primer molar permanente y las consecuencias de la pérdida prematura del mismo es intermedio. Las madres que mostraron mejor o mayor conocimiento están comprendidas en el rango de edad de 25 a 34 años, con un nivel de escolaridad de bachillerato e ingresos económicos de 250.00 a 350.00 USD.

Palabras clave: erupción, nivel de conocimiento, primer molar permanente, molar primario, El Salvador.

INTRODUCTION

The importance of the first permanent molar in children lies in its role in proper chewing and achieving an ideally desirable occlusion. Premature loss of the first permanent molar can lead to changes in dental arches, teeth misalignment, extrusion of opposing teeth, and temporomandibular joint disorders (1). Serindere and colleagues mention that the first permanent molars are more prone to caries, presumably due to their early exposure in the oral cavity. Furthermore, in more than 50% of children over the age of 11, the decision to extract these molars was made (2).

The future of a child's oral health, even before birth, can be determined by the mother. The care and attention provided during the early years of

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life are crucial for developing healthy teeth in childhood and adolescence (3).

The mother's knowledge is important as it contributes to the integral development of the child, including aspects of health and dental care. Therefore, studying these aspects is crucial in order to emphasize the promotion of oral health, since a low level of knowledge is associated with higher rates of oral diseases such as dental caries and periodontal disease, which can lead to malocclusions (4).

Pimentel and Romero mention that mothers play an important role as they are primarily responsible for the care and preservation of their children's teeth, therefore, the purpose of this study is to determine the knowledge level of mothers regarding the importance of the first permanent molars (5).

The oral cavity is considered a fundamental part of the body; having a healthy oral cavity is crucial for proper chewing, speaking, and overall appearance. Neglecting oral health can have an impact on the entire body, therefore, it is vital to have knowledge about the importance of the eruption of the first molar (6).

The first molar marks the beginning of the unique and definitive eruption of permanent teeth in the oral cavity; it continues to strengthen over the following life years. The eruption occurs between the ages of 6 and 7 years in children; this tooth erupts in replacement of the second deciduous molar (7).

Díaz et al. and Pupo Arias concluded in their respective studies, that the lower right first molar has the highest prevalence of tooth loss. Related literature suggests that this is due to the first lower molars erupting before the upper molars. Additionally, they are highly susceptible to dental caries due to their occlusal morphology, which favors the accumulation of dentobacterial plaque; as a result, they are commonly restored, even before their occlusal surface is fully exposed in the mouth (8, 9).

It is worth mentioning that age plays an important role in the mortality of the first permanent molar, as it is the first permanent tooth to erupt and spends more time in contact with the oral environment. Pupo Arias mentions that the first permanent molar is the most frequently lost tooth in children under 12 years old (9).

Vilvey mentions that dental caries are considered the main cause of mortality of the first permanent molar, because if they are allowed to evolve without interposing barriers in their natural history, they lead to dental loss (10).

According to the World Health Organization, dental caries is the oral condition with the highest incidence and prevalence worldwide (11).

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METHODOLOGY

The study's approach is quantitative, as it sought to measure a phenomenon, quantify it, or express it in numbers, based on the parameters studied.

As for the type of research, it was descriptive, because it evaluated the knowledge of mothers of children aged 5 to 9 years regarding the importance of the first permanent molar, without examining the relationships between them.

Furthermore, it is cross-sectional, since the data was collected in a specific period of time, from a predefined population, sample, or subset.

The survey technique was employed, using a questionnaire administered to mothers of children aged 5 to 9 years to assess their level of knowledge regarding the eruption and importance of the first permanent molar.

The instrument used was a questionnaire, which was validated by dental professionals specializing in pediatric dentistry, public health, and research. The questionnaire consisted of close-ended and categorized questions. Data collection was conducted using the structured questionnaire, which contained close-ended questions determined by the researchers and administered to the study population, with their prior consent to participate in the research.

Subject and object of the study

Units of analysis: mothers of children aged 5 to 9 years

Population: mothers of children aged 5 to 9 years who attended:

- 1. Intipucá Health Unit, La Unión department, eastern region: 80 mothers.
- NGO Orden de Malta, Cuscatlán department, paracentral region: 65 mothers.
- 3. David King Medical Center, Jucuapa, Usulután department, eastern region: 100 mothers.

Sample: 245 mothers of children aged 5 to 9 years.

Convenience sampling was used, as it depended on the mothers who attended the aforementioned institutions between May and July 2022.

Inclusion criteria

- Mothers of children aged 5 to 9 years who attended the Intipucá UCSFI (Health Unit) from April to July 2022.
- 2. Mothers of children aged 5 to 9 years who attended the David V. King Medical Center from April to July 2022.
- 3. Mothers of children aged 5 to 9 years who attended the Virgen de Philermo Dental Clinic of the Order de Malta from April to July 2022.



Exclusion criteria

- 1. Adolescent or underage mothers.
- 2. Mothers with mental or learning disabilities.
- 3. Mothers who do not have children within the age range established for the study.
- 4. Mothers who cannot write and read

Ethical aspects

- 1. The mothers were explained and provided with the informed consent document for their knowledge about the research; once they accepted it, the survey consisting of 32 questions was conducted.
- 2. The draft project was approved by the Comité de Ética para la Investigación en Salud (CEIS-UEES, Committee for Ethics in Health Research) on May 26, 2022.
- 3. Informed consent: when contacting the mothers, their collaboration and voluntary participation were requested to answer the survey and to perform the respective data collection.
- 4. Confidentiality guarantee: the mothers were informed that all obtained information is treated confidentially.
- 5. Right to withdraw: they were made aware that at any time during the survey or when encountering questions that they felt uncomfortable answering, they could withdraw and/or refuse to provide specific information, regardless of their reasons for doing so.

Information processing and analysis

Data collection was carried out through a structured questionnaire, which contained close-ended questions determined by the researchers and was administered to the study population after obtaining their prior consent to participate in the research.

The study identified the knowledge level of mothers of children aged 5 to 9 years regarding the eruption and importance of the first permanent molars, taking into account sociodemographic characteristics, mothers' age, income level, and education level. The following indicators were established for the knowledge level of mothers of children aged 5 to 9 years, regarding the eruption and importance of the first permanent molars: adequate (75% to 100%), acceptable (50% to 75%), intermediate (25% to 50%), and low (0% to 25%). These indicators are based on previous studies (12, 13, 14).

For the education level, the level of schooling was considered according to the education system of El Salvador: preschool and basic education levels, secondary education level (general and vocational high school), higher education level (technical and university education).

Regarding household income, the following ranges were established: less than 200.00 USD, 250.00 to 350.00 USD, and more than 400.00 USD.

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A virtual survey was conducted using the Google Forms tool, which was answered by 245 mothers of different ages. Data processing was performed in Excel 2016, applying frequency distribution calculation, contingency tables or two-way tables; in addition, graphs and tables were used for their representation.

RESULTS

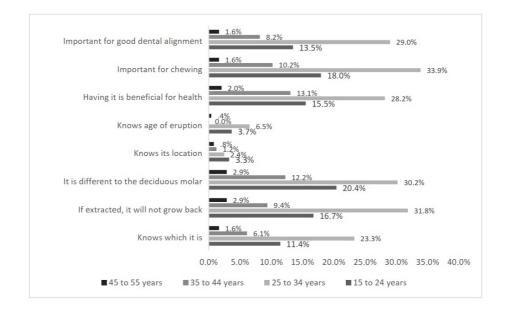


Figure 1. Knowledge level—according to age—of mothers of children aged 5 to 9 years regarding the importance of the first permanent molars. Source: Survey database.

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42.4% of the mothers who participated in the study claim to know which is the first permanent molar. Out of this percentage, mothers aged 25 to 34 years represent 23.3%.

60.8% of the mothers who participated in the study believe that if the first permanent molar is extracted, it will not grow back. Out of this percentage, mothers aged 25 to 34 years represent 31.8%.

65.7% of the mothers say that the first permanent molar is not the same as the first primary molar or first milk molar. Out of them, 30.2% are in the age range of 25 to 34 years.

Of the participating mothers, 7.8% have knowledge of the location of the first permanent molar in the mouth. Out of this percentage, 3.3% are mothers whose ages range from 15 to 24 years. 10.6% of the participating mothers are aware of the age at which the first permanent molar erupts. Out of this percentage, 6.5% are in the age range of 25 to 34 years.

As for having the first permanent molar, 58.8% of the participating mothers believe that it is beneficial for health. Out of this percentage, 28.2% are in the age range of 25 and 34 years.

63.7% of the participating mothers consider the first permanent molar important for chewing. Out of this percentage, 33.9% are mothers whose ages range from 25 to 34 years.

52.2% of the participating mothers believe that not losing the first permanent molar is important for maintaining good dental alignment. Out of this percentage, 29% are mothers whose ages range from 25 to 34 years.

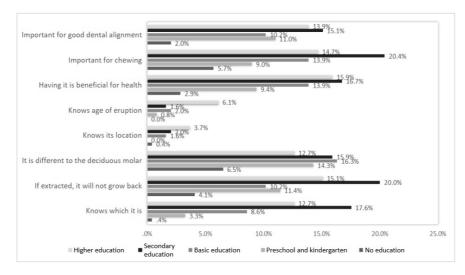


Figure 2. Knowledge level—according to education level—of mothers of children aged 5 to 9 years regarding the importance of the first permanent molars. Source: Survey database.

Regarding the knowledge level of mothers of children aged 5 to 9 years, 42.4% claim to know which is the first permanent molar. Out of this percentage, 17.6% are mothers with a high school education level.

60.8% of the mothers who participated in the study believe that if the first permanent molar is extracted, it will not grow back. Out of this percentage, 20.0% are mothers with a high school education level.

65.7% of the mothers mention that the first permanent molar is not the same as the first primary molar. Out of this percentage, 15.9% have a high school education level.

7.8% of the participating mothers have knowledge of the location of the first permanent molar. Out of this percentage, 3.7% are mothers with a higher education level. 10.6% of the mothers say they are aware of the age at which the first permanent molar erupts. Out of this percentage, 6.1% have a higher education level.

As for having the first permanent molar, 58.8% of participating mothers believe that it is beneficial for health. Out of this percentage, 16.7% have a high school education level.

63.7% of the participating mothers consider the first permanent molar important for chewing. Within this percentage, 20.4% have a high school education level.

52.2% of the participating mothers consider that not losing the first permanent molar is important for maintaining good dental alignment. Out of this percentage, 15.1% have a high school education level.

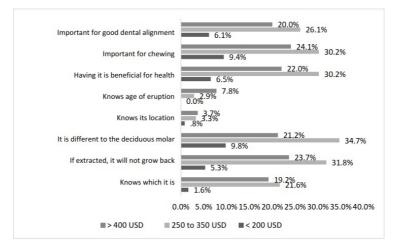


Figure 3. Level of knowledge—according to income—of mothers of children aged 5 to 9 years regarding the importance of first permanent molars. Source: Survey database.



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Regarding the level of knowledge among mothers of children aged 5 to 9 years, 42.4% claim to know which is the first permanent molar. Out of this percentage, 21.6% are mothers with a monthly income ranging from 250.00 to 350.00 USD.

60.8% of the mothers who participated in the study believe that if the first permanent molar is extracted, it will not grow back. Out of this percentage, 31.8% are mothers with a monthly income ranging from 250.00 to 350.00 USD.

65.7% of the mothers say that the first permanent molar is not the same as the first primary or deciduous molar. Out of this percentage, 34.7% are mothers who have a monthly income ranging from 250.00 to 350.00 USD.

7.8% of the participating mothers have knowledge of the location of the first permanent molar in the mouth. Out of this percentage, 3.7% are mothers with a monthly income of more than 400.00 USD.

Regarding the age at which the first permanent molar erupts, 10.6% of the participating mothers

are aware of it. Within this percentage, 7.8% have a monthly income of over 400.00 USD.

10.6% of the participating mothers are aware of the age at which the first permanent molar erupts. Out of this percentage, 7.8% have a monthly income of more than 400.00 USD.

As for having the first permanent molar, 58.8% of the participating mothers claim to believe that it is beneficial for health. Out of this percentage, 30.2% have a monthly income ranging from 250.00 to 350.00 USD.

63.7% of the participating mothers consider the first permanent molar important for chewing. Out of this percentage, 30.2% are mothers with a monthly income ranging from 250.00 to 350.00 USD.

52.2% of the participating mothers consider that not losing the first permanent molar is important for maintaining good dental alignment. Out of this percentage, 29% are mothers with a monthly income ranging from 250.00 to 350.00 USD.

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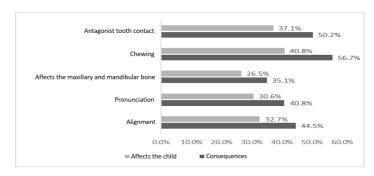


Figure 4. Level of knowledge of mothers of children aged 5 to 9 years about the consequences of premature loss of the first permanent molars. Source: Survey database.

44.5% of the participating mothers consider that the loss of the first permanent molar alters the alignment of the teeth. Out of this percentage, only 32.7% affirm that the loss of the first permanent molar affects their child.

40.8% of participating mothers consider that the loss of the first permanent molar affects pronunciation. Out of this percentage, 30.6% affirm that the loss of the first permanent molar affects their child.

35.1% of the participating mothers consider that the loss of the first permanent molar affects the maxillary or mandibular bone. Out of this percentage, 26.5% believe that the loss of the first permanent molar affects their child.

56.7% of the participating mothers think that the loss of the first permanent molar would change the way of chewing. Out of this percentage, 40.8% affirm that the loss of the first permanent molar affects their child.

Regarding the loss of the first permanent molar, 50.2% of the participating mothers consider that it affects the tooth it makes contact with. Out of this percentage, 37.1% affirm that the loss of the first permanent molar affects their child.

Discussion of results

The results of this research match with those obtained by Herrera L., who stated that mothers with an average age of 28 years have an adequate

knowledge level about dental health, oral diseases, and prevention (12).

The knowledge of mothers of children aged 5 to 9 years—according to the mothers' age—regarding the importance of the first permanent molar is, on average, 45.25%, which is equivalent to an intermediate knowledge level.

It is evident that mothers in the age range of 25 to 34 years have a higher level of knowledge about the importance of the first permanent molar and the consequences of its loss.

The study conducted by Quiñones and Barría mentions the relationship between the mothers' education level and the oral health of their children. There is a prevalence of a middle higher-education level among the mothers of the children under study, regardless of whether their children had good or bad oral health. However, despite a high level of education of the mothers, there are many children with inadequate oral health (13).

The results of this research differ from those obtained by Pimentel and Romero, who mention that having a higher level of education does not necessarily correlate with high levels of knowledge regarding oral health. Knowledge about oral health varies between medium and low levels even among individuals with levels of higher education (14).

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The knowledge of mothers of children aged 5 to 9 years regarding the importance of the first permanent molar is, on average, 45.25%, equivalent to an intermediate knowledge level.

According to Kawachi L, children from lower socioeconomic backgrounds experienced more and greater severity of dental caries in both their primary and permanent dentitions. The discrepancies found in caries indicators, across the independent variables of interest, highlight the social inequalities in oral health (15).

The results of this research match with what was mentioned by Medina Solís, who affirms that there is an association between the level of household income and the oral health of a child: lower socioeconomic position, greater severity in their oral health problems (16).

The knowledge of mothers of children aged 5 to 9 years—according to their monthly household income—regarding the importance of the first permanent molar is, on average, 45.25%, equivalent to an intermediate level of knowledge.

The theory of Teixeira Gonzales and colleagues mentions that the oral health knowledge of mothers regarding their children is low, therefore, it becomes necessary to provide education about oral health, not only to the mothers but also to health professionals (17). The tendency of the results match with a study conducted by Lourdes A. Benavente Lipa and colleagues, aimed at obtaining more information about the level of knowledge of mothers and its relationship with the oral health status of children under five years of age. The study concluded that mothers have a moderate level of knowledge about oral health; however, the oral health of the children of the surveyed mothers is poor, revealing an absence of association with the level of oral health knowledge that mothers have (18).

Finally, the results of the study will be applicable for interventions that align with the needs of the mothers, ensuring a positive impact on oral health, starting with the consolidation of knowledge, promotion of attitudes in favor of children's oral health, which are important aspects of the comprehensive care of the child population. Mothers are considered the primary source of early education for children, along with teachers and all individuals responsible for their care.

The knowledge of mothers of children aged 5 to 9 years regarding the consequences of premature loss of the first permanent molar is, on average, 45.46%, which is equivalent to an intermediate level of knowledge.

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