



## Short article

# Knowledge and attitudes of doctors, nurses, and pediatricians towards oral health in early childhood

## Conocimientos y actitudes de médicos, enfermeras y pediatras hacia la salud bucodental en primera infancia

Paola Carolina Guevara-Lagos<sup>1</sup>, Lina María Mueses-Cuasquer<sup>2</sup>, Román Fernando Mueses-Yundun<sup>3</sup>, Jairo Corchuelo-Ojeda<sup>4</sup>, Bruno Gutierrez-Quiceno<sup>5</sup>

**How to cite this article:** Gutiérrez B, Gaviria-Lagos PC, Mueses-Cuasquer LM, Mueses-Yundun RF, Corchuelo-Ojeda J. Conocimientos y actitudes frente a la salud bucodental de la primera infancia: la visión de los médicos, enfermeras y pediatras. *Duazary*. 2024;21:62-8. <https://doi.org/10.21676/2389783X.5620> Paola Carolina Guevara-Lagos

Received on December 21, 2023  
Accepted on March 15, 2024  
Posted online March 30, 2024

### ABSTRACT

**Introduction:** Early generating oral care and hygiene habits is critical in the child's development. Professionals such as pediatricians, nurses, and doctors have close contact with health professionals in contact with pregnant women and infants, essential in preventing oral diseases and their social impact on people's quality of life. **Objective:** To determine the knowledge and attitudes about early childhood oral health of pediatricians, doctors, nurses, and nursing assistants in social enterprises in Cali, Colombia. **Method:** A descriptive study was conducted in 38 health-providing institutions in seven communes and two rural areas of Cali, developed through a structured questionnaire with 27 questions. Results: 74 professionals participated, 35.8% presented regular knowledge of oral health, and 87.8% had a good attitude toward the subject. **Conclusions:** Health personnel must be trained in oral health conditions to improve infant care quality in health institutions.

**Keywords:** Knowledge; Behavioral medicine; Attitudes and practice in health; Education; Health personnel; Descriptive studies.

### RESUMEN

**Introducción:** generar hábitos de cuidado e higiene oral desde una temprana edad es clave en el desarrollo del niño. Existen profesionales como pediatras, enfermeras y médicos que tienen un contacto estrecho con profesionales de salud en contacto con gestantes e infantes es fundamental en la prevención de enfermedades bucodentales y en el impacto social que produce sobre la calidad de vida de las personas. **Objetivo:** determinar el conocimiento y actitudes sobre la salud bucodental de la primera infancia de pediatras, médicos, enfermeras y auxiliares de enfermería en una empresa social del Estado de Cali, Colombia. **Método:** se realizó un estudio en descriptivo en 38 instituciones prestadoras de salud en siete comunas y dos zonas rurales de Cali, desarrollado por medio de un cuestionario estructurado con 27 preguntas. **Resultados:** participaron 74 profesionales; el 35,8% presentó conocimientos regulares en el tema de salud oral, además de un 87,8% con buena actitud frente al tema. **Conclusiones:** es necesario que el personal de salud este capacitado frente a condiciones de salud bucodental, lo anterior mejoraría la calidad de la atención del infante en las instituciones de salud.

**Palabras clave:** conocimiento; medicina de la conducta; actitudes y práctica en salud; educación; personal de salud; estudios descriptivos.

1. Universidad del Valle. Cali, Colombia. Correo: [paola.guevara@correounivalle.edu.co](mailto:paola.guevara@correounivalle.edu.co) - <https://orcid.org/0000-0001-5495-2873>
2. Universidad del Valle. Cali, Colombia. Correo: [lina.mueses@correounivalle.edu.co](mailto:lina.mueses@correounivalle.edu.co) - <https://orcid.org/0000-0003-1206-1014>
3. Universidad del Valle. Cali, Colombia. Correo: [roman.mueses@correounivalle.edu.co](mailto:roman.mueses@correounivalle.edu.co) - <https://orcid.org/0000-0002-4001-4015>
4. Universidad del Valle. Cali, Colombia. Correo: [jairo.corchuelo@correounivalle.edu.co](mailto:jairo.corchuelo@correounivalle.edu.co) - <http://orcid.org/0000-0003-2507-6071>
5. Universidad del Valle. Cali, Colombia. Correo: [gutierrez.bruno@correounivalle.edu.co](mailto:gutierrez.bruno@correounivalle.edu.co) - <http://orcid.org/0000-0001-8949-7647>

## INTRODUCTION

Planning a pregnancy in mothers, children, and adolescents guides future behaviors; in these stages, essential recommendations are given for preventing cavities and periodontal diseases; the purpose is to create positive attitudes from an early age that will be difficult to change. Likewise, it is considered the ideal stage of health education.<sup>1</sup>

Health professionals in more significant contact with parents and children under six years of age have greater significance in the lives of children, favorably influencing the knowledge, skills, and behavior of individuals, groups, and communities, who, in some cases, turn it into habits.<sup>2,3</sup> Professionals use effective techniques, such as affective-participatory techniques, in the case of dentistry.<sup>4</sup>

Health professionals have a role as educators in the 21st century,<sup>5</sup> there are previous approximations of the level of knowledge of medical, nursing, and dental students on topics related to oral health in pregnant women, only half of the students have received training on oral pathologies.<sup>6</sup>

Some authors, such as González *et al.*,<sup>7</sup> suggest that doctors and pediatricians should improve their knowledge about oral care and the early appearance of cavities; they highlight that pediatricians show little knowledge regarding visits to the dentist and treatment of cavities; however, their level of knowledge about oral hygiene, cavities, and nutrition was adequate. For this reason, it has been recommended that oral health education be strengthened.<sup>8</sup>

Health professionals are critical in developing monitoring and health education processes, and their development as educators is essential in the 21st century. This education includes the generation of oral health practices and the need to establish specific patient knowledge and attitudes. There is a research gap regarding the knowledge and attitudes of pediatricians, doctors, and nurses in Colombia, a transcendental public health issue. In addition, the existing literature needs to be more at the level of knowledge.

The study aimed to determine the knowledge and attitudes toward oral health of health professionals, pediatricians, doctors, nurses, and nursing assistants in Cali, Colombia, 2022.

## METHOD

### Kind of study and participants

A descriptive study was carried out for which the sample size was the population universe: the total number of professionals reported from the growth and development program of Red de Salud Ladera de Cali; a group of 79 workers distributed among three pediatricians, 25 general practitioners, seven professional nurses, and 44 nursing assistants. The area of influence of 38 institutions is seven communes and all the townships in the rural area.

### Participants

The sample was selected through non-probabilistic sampling, determined by convenience, and comprised 63 people with permanent residence in the study area and greater age.

## **Instruments**

The collection instrument was based on the Anticona information collection instrument.<sup>9</sup> Sociodemographic variables such as profession, gender, age, year of graduation, and years of work experience were also investigated.

## **Procedure and collection of information**

An epidemiological questionnaire of 27 questions related to knowledge and attitudes regarding knowledge in early childhood that includes questions about plaque, healthy mouth, age of beginning brushing, visits to the dentist, oral health training, application and action of fluoride and sealants Regarding attitude, variables such as commitment to participation in actions and training in oral health, concern for oral health, the importance of oral health, the need for specific health professions to provide health information were included—oral health, preventive management of oral health diseases, remission and oral hygiene actions, among others. The scale classifies excellent or lousy knowledge. The authors declare no conflict of interest.

A rating scale from one (low) to five (high) was used to quantify attitude. The maximum score was 40, categorized between 1 and 13 lousy attitudes, between 14 and 27 fair attitudes, and between 28 and 40 excellent attitudes. The questions related to knowledge in oral health were on a scale of 1 to 5; excellent knowledge was considered with an average greater than or equal to 3.7. This scale has been used in conversion scales that were previously carried out.<sup>10</sup> Completing the questionnaire took an average of 20 minutes.

## **Analysis statistics**

The data were coded in Microsoft Excel and refined, coded, and analyzed in SPSS 28. The analysis was based on descriptive statistics, observing frequencies (f) and calculating percentages (%), mean (M), standard deviation (SD), median (Me), and interquartile range (IQR).

## **Statement about aspects of ethical**

The project was approved by the ethics committee of the ESE and by the Institutional Review Committee for Human Ethics (CIREH) of Universidad del Valle through document 086-021. This study adapted the standards established in the Declaration of Helsinki of 1975 and Resolution 8430 of 1993 of the Ministry of Health of Colombia for research with human beings. Informed consent was provided, and the well-being and integrity of the participants were protected.

## **RESULTS**

Of the 79 professional workers at the institution, 74 participated (response rate 92.4%), with an average age of 35.6 years (SD=11.4). The participants were nursing assistants (54.1%), general practitioners (32.4%), nurses (12.2%), and pediatricians (2.7%). 85.1% of the participants were women, and around two-thirds had worked for less than ten years.

Regarding training, 48.6% reported having had some. During work experience within the ESE, 49% obtained the information in the last two years, 16.2% through refresher courses, 13.5% from Internet articles, 4.1% from books, 2.7% from online seminars, and 1.4% from scientific journals. See Table 1.

**Table 1.** Sociodemographic characterization of participating professionals.

| Variable  | F  | %    |
|---|----|------|
| <i>Profession</i>                                 |    |      |
| Pediatrist  | 1  | 1.3  |
| General practitioners                             | 23 | 32.4 |
| Nurse   | 7  | 12.2 |
| Nursing assistant                                 | 42 | 54.1 |
| <i>Gender</i>                                     |    |      |
| Male  | 11 | 14.9 |
| Female  | 63 | 85.1 |
| <i>Level of education</i>                         |    |      |
| University or specialization                      | 32 | 43.2 |
| Technical level                                   | 42 | 56.8 |
| <i>Time of work experience (years)</i>            |    |      |
| Under 5   | 34 | 45.9 |
| Between 6 and 10                                  | 14 | 18.9 |
| Greater than 10                                   | 26 | 35.2 |
| <i>Training during oral health training</i>       |    |      |
| Yes   | 36 | 48.6 |
| No  | 38 | 51.4 |
| <i>Oral health training in the last two years</i> |    |      |
| Yes   | 30 | 40.5 |
| No  | 44 | 59.4 |

In the last two years, 36.7% took refresher courses in their company and 23.3% through articles. 86% said they knew the diseases; dental caries was the predominant one (94.6%), followed by gingivitis (71.6%) and abscesses (39.2%). 28.4% expressed that periodontal problems affect children, and 35.5% had fair to poor knowledge.

In oral hygiene, 45.1% reported the onset at three months, 29.7% from birth, and 18.9% from the first tooth's eruption. Around 9 out of 10 professionals (91.9%) affirmed using bottles and pacifiers as risk factors for oral diseases. Table 2 shows the attitude and knowledge according to the profession.

**Table 2.** Attitude and knowledge according to profession in frequencies (percentages).

| Attitude         | Auxiliaries<br>f (%) | Nurses<br>f (%) | General practitioners<br>f (%) | Pediatrician<br>f (%) |
|------------------|----------------------|-----------------|--------------------------------|-----------------------|
| Good             | 34 (85)              | 7 (77.8)        | 23 (95.8)                      | 1 (100)               |
| Regular          | 6 (15)               | 2 (22.2)        | 1 (4.2)                        | 0                     |
| <i>Knowledge</i> |                      |                 |                                |                       |
| Well             | 27 (67.5)            | 6 (66.7)        | 14 (58.3)                      | 1 (100)               |
| Regular          | 13 (32.5)            | 3 (33.3)        | 10 (41.7)                      | 0                     |

Regarding attitude, whose variables were previously described, an average score of 32.3 was obtained (SD=3.6, Me=33, IQR=4.3). All staff agreed on the relationship between oral health conditions and the general state of health; 83.6% stated that they are in charge of diagnosing cavities in consultation, and 63.5% agreed on preventing cavities. Approximately one in a quarter of professionals (24.3%) do not know the action of fluoride.

The professionals expressed poor hygiene as the etiology of diseases, followed by bottle use (91.9%), sugar consumption (87.8%), dental crowding (65.1%), and family inheritance (24.0%). Most professionals knew the importance of referral to the pregnant woman. However, 12.4% of them have never done it. Regarding hygiene elements at nine months, 67.6% reported using gauze.

## DISCUSSION

The findings show a duality between deficient knowledge of oral health and health professionals' good attitude toward the subject. This observation suggests that health professionals require training rather than strengthening attitudes. A large percentage is in the range of regular knowledge (35.8%), a finding previously reported.<sup>11</sup> Others have shown a need for dental and general caries knowledge, which complicates oral health problems.<sup>12,13</sup>

Other studies have reported good knowledge of general practitioners (78.1%) and pediatricians (81.3%); in other publications, around 60%.<sup>14,15</sup> These findings generally agree with what was found in the present study. Another finding is referrals to dental services; professionals agree with this practice.<sup>16,17</sup>

The excellent attitude presented by a high percentage of professionals makes it necessary to investigate the attitude of pediatricians because the behavior has been different in other publications, and the sample in this study was small.<sup>17</sup> A high percentage of professionals were found to have yet to receive training during their training. Physicians, pediatricians, assistants, and nurses must know this area to generate promotion and prevention actions and referrals.<sup>18</sup>

Professionals who care for early childhood must know the importance of oral hygiene.<sup>11</sup> Thinking about health from a more holistic point of view is critical to understanding people and their particularities.<sup>12</sup> It is vital that professionals have time during care to give the necessary recommendations based on the life cycle due to the implications it presents with life itself in older adults.<sup>18,19</sup> It is critical to establish clear guidelines and protocols from public health to generate more preventive actions specific to promoting oral health and preventing disease in early childhood.

This research has the strength of having a high participation of health professionals from the included health institutions. However, this study has limitations, including the low number of pediatricians the design described and the omission to address the attitudes and knowledge of the children's parents and companions.

## CONCLUSIONS

The attitude toward health care and hygiene in childhood among health personnel in Cali, Colombia, is good. However, health personnel's knowledge of the issues could be improved. More similar studies are needed in Colombian cities.

## ACKNOWLEDGMENTS

To the pediatricians, doctors, assistants, and nurses of the ESE Ladera de Cali for their participation and support in the study and to the board of directors for facilitating the research.

## STATEMENT ABOUT CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

## CONTRIBUTION OF THE AUTHORS

**BGQ** participated in conceptualization, data curation, formal analysis, research, method, project management, software, supervision, validation, visualization, writing the original draft, and reviewing or editing the writing.

**PCGL** was involved in conceptualization, data curation, formal analysis, investigation, method, validation, visualization, writing the original draft, and reviewing or editing the writing.

**LMMC** participated in conceptualization, data curation, formal analysis, investigation, method, validation, visualization, writing the original draft, and reviewing or editing the writing.

**RFMY** participated in conceptualization, data curation, formal analysis, investigation, method, validation, visualization, writing the original draft, and reviewing or editing the writing.

**JCO** participated in conceptualization, data curation, formal analysis, research, method, project management, software, supervision, validation, visualization, writing the original draft, and reviewing or editing the writing.

## REFERENCES

1. Ruiz-Feria N, González-Heredtia E, Soberats-Zaldívar M, Amaro-Guerra I. Modificación del nivel de conocimientos sobre salud bucal en educandos de la enseñanza primaria. *Medisan*;2004;8:24-6.
2. Corchuelo-Ojeda J, Romero-Velez E, Gutiérrez-Grajales AC. Percepciones, conocimientos y actitudes de profesionales de la salud latinoamericanos acerca de la salud bucodental de gestantes. *Rev Colomb Obstet Ginecol*. 2017; 68:266-74.
3. Rengifo-Reina H. Creencias acerca de la salud oral en gestantes en tres ciudades colombianas. *Rev Fac Odontol Univ Antioq*. 2009;20:171-8.
4. Tan N, Montes C-A, Martinez S. Promoción de salud: un camino para la estomatología del futuro. *Rev Hum Med*. 2005;5.
5. Gutiérrez B, Perdomo A. El reto del ejercicio odontológico post COVID-19: Una reflexión desde la salud publica y la odontología. *Salutem Scientia Spiritus*. 2020;6:55-62.

6. Corchuelo J, Mambuscay JC. Conocimientos de estudiantes de medicina, enfermería y odontología acerca de la salud bucodental en gestantes. Cali, 2015. Salud Uninorte, 34. <https://doi.org/10.14482/sun.34.3.617.63>
7. González E, Pérez-Hinojosa S, Alarcón JA, Peñalver MA. Conocimiento de pediatras y padres andaluces sobre caries de aparición temprana. An Pediatr(Barc). 2015;82:19-26. <http://dx.doi.org/10.1016/j.anpedi.2014.01.014>
8. Pizarro C, Valenzuela D. Level of oral health knowledge of the healthcare team in primary health care centers in the Valparaiso region. Rev Chile Salud Publica. 2014;18:87-94. <https://doi.org/10.5354/0719-5281.2014.30760>
9. Anticona CF. Nivel de conocimiento y actitud sobre caries de la primera infancia de los pediatras del Instituto Especializado De Salud Del Niño. 2006.
10. Granada UN. Tabla de Conversion de Calificaciones: Universidad de Granada sobre Movilidad Internacional de Estudiantes; 2023.
11. González E, Pérez-Hinojosa S, Alarcón JA, Peñalver MA. Conocimiento de pediatras y padres andaluces sobre caries de aparición temprana. An Pediatr (Barc). 2015 Jan;82:19-26. <https://doi.org/10.1016/j.anpedi.2014.01.014>
12. Gutierrez B; Barrera, LA. A Scoping Review of Complexity Science in Dentistry. Dental Hypotheses. 12:109-17. [https://doi.org/10.4103/denthyp.denthyp\\_166\\_20](https://doi.org/10.4103/denthyp.denthyp_166_20)
13. Gupta SK, Gupta S, Gojanur S, Kour G, Singh K, Rani P. Pediatricians' view on early childhood caries and oral health in a north region of India: A cross-sectional study. J Family Med Prim Care. 2019;8:220-4. [https://doi.org/10.4103/jfmpc.jfmpc\\_201\\_18](https://doi.org/10.4103/jfmpc.jfmpc_201_18)
14. Contreras-Vasquez N, Valdivieso-Vargas M, Cabello E. Level of knowledge and preventive practices of professionals health on dental caries in the infant. Rev Estomatol Hered. 2008;18:29-34.
15. Hope-López B, Zaror-Sánchez C, Vergara-González C, Díaz-Melendez J, Bustos-Medina L. Knowledge and attitudes of Chilean pediatricians regarding oral health. Int J Odontostomatol. 2013;7:245-51.
16. Sabbagh HJ, El-Kateb M, Al Nowaiser A, Hanno AG, Alamoudi NH. Assessment of pediatricians dental knowledge, attitude and behavior in Jeddah, Saudi Arabia. J Clin Pediatr Dent. 2011;35:371-6. <https://doi.org/10.17796/jcpd.35.4.8626721g8742102p>
17. Alshunaiber R, Alzaid H, Meaigel S, Aldeeri A, Adlan A. Early childhood caries and infant's oral health; pediatricians' and family physicians' practice, knowledge and attitude in Riyadh city, Saudi Arabia. Saudi Dent J. 2019;31(Suppl):S96-105. <https://doi.org/10.1016/j.sdentj.2019.01.006>
18. Ordóñez MA, Benavidez CA, Gómez CY, Calzada MT, Gutiérrez B. Oral conditions, occlusal pairs, and masticatory function of institutionalized older people in Cali Colombia, 2019. Univ Odontol. 2022;41. <https://doi.org/10.11144/Javeriana.uo41.ocop>
19. Gutierrez B, Martinez AG, Arroyave ID. Edentulism and individual factors of active aging framework in Colombia. Ann Geriatr Med Res. 2023. <https://doi.org/10.4235/agmr.23.0158>