



ORIGINAL

Educational program on oral health “Healthy smile”: knowledge and role of legal responsibilities and educators

Programa educativo sobre salud bucodental “Sonrisa saludable”: conocimiento y rol de responsables legales y educadoras

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ABSTRACT

Introduction: to achieve the health of infants and increase their quality of life, the health of legal guardians and educators is of particular importance; their beliefs and behaviors; and the ability, knowledge and will to acquire and provide the infant with healthy ways and styles of life.

Objective: determine the effectiveness of the “Healthy Smile” Program in terms of knowledge about oral health of legal representatives and educators, as well as the role of educators of preschool infants.

Methods: a quasi-experimental before-after research was carried out where the sample was 86 legal guardians and 9 preschool educators from the “La Demajagua-Atanagildo Cajigal” towns in the period 2021-2023.

Results: the pre-university level of instruction predominated (68; 71,579 %) and a regular level of knowledge (73; 76,842 %) before the implementation of the program; the same being modified to good (77; 81,053 %) with a tendency to fair (18; 18,947 %). The educators significantly increased (8; 88,88 %) the reasons for preventing diseases related to the stomatognathic apparatus to maintain good oral hygiene; the results of the student T test showed statistically significant differences in knowledge of caries ($X_1=3,22$; $X_2=3,80$) and about children’s oral health ($X_1=1,55$; $X_2=3,44$).

Conclusions: the “Healthy Smile” program was effective in positively modifying the level of knowledge about oral health of legal representatives and educators, as well as in the role assumed by them with respect to the health of the infants in their care.

Keywords: Educational Program; Educative Intervention; Oral Health; Knowledge Level; Role of Educators.

RESUMEN

Introducción: para el logro de la salud de los infantes e incremento de su calidad de vida, reviste particular importancia la salud de los responsables legales y educadoras; las creencias y los comportamientos de los mismos; y la capacidad, los conocimientos y la voluntad para adquirir y proporcionar al infante modos y estilos de vida saludables.

Objetivo: determinar la efectividad del Programa “Sonrisa saludable” en cuanto a conocimiento sobre salud bucodental de responsables legales y educadoras, así como el rol de las educadoras de infantes de preescolar.

Métodos: se realizó una investigación cuasi-experimental de tipo antes-después donde la muestra fue de 86 responsables legales y 9 educadoras de infantes de preescolar de los poblados “La Demajagua-Atanagildo

Cajigal” en el período 2021-2023.

Resultados: predominó el nivel de instrucción preuniversitario (68; 71,579 %) y un nivel de conocimiento regular (73; 76,842 %) antes de la implementación del programa; siendo modificado el mismo a bueno (77; 81,053 %) con tendencia a regular (18; 18,947 %). Las educadoras incrementaron significativamente (8; 88,88 %) las razones de prevención de las enfermedades relacionadas con el aparato estomatognático para mantener una buena higiene bucodental; los resultados de la prueba T student evidenciaron diferencias estadísticamente significativas en el conocimiento de la caries ($X_1=3,22$; $X_2=3,80$) y sobre salud bucal infantil ($X_1=1,55$; $X_2=3,44$).

Conclusiones: el programa “Sonrisa saludable” fue efectivo en la modificación positiva del conocimiento sobre salud bucodental de responsables legales y educadoras, así como en el rol asumido por las mismas para con la salud de los infantes a su cuidado.

Palabras clave: Programa Educativo; Intervención Educativa; Salud Bucodental; Nivel De Conocimiento; Rol De Las Educadoras.

INTRODUCTION

Ensuring the good health of infants implies the need for policies that contemplate the articulation between the sectors responsible for guaranteeing the integral development of children. Hence, an orientation towards developing healthy habits, with a preventive approach, is considered an educational action in which families, educators, and health personnel should be involved.

According to Hooley et al.⁽¹⁾, dental caries is one of the most common diseases in early childhood (Early childhood caries - ECC) worldwide, which, according to Arrow, Raheb, and Miller⁽²⁾, if not prevented, can have consequences on the growth of children, on their quality of life and even on their cognitive and social development. According to the World Health Organization⁽³⁾ (WHO), it constitutes a public health problem, which, according to Hooley et al.⁽¹⁾, is even more accentuated in developing countries.

According to Montano et al.⁽⁴⁾, the WHO reports that 60-90 % of children worldwide have dental caries, the most prevalent disease in Latin America and Asia. The same group of authors states, "The following research has shown the increasing and worrying incidence and prevalence of caries in early childhood populations in recent decades: the IV National Oral Health Study in Colombia reported a prevalence of 43,77 % and 52,2 % in children aged three and five years respectively; in Wuhan, China the prevalence was 50,8 %, 63,6 % and 71,9 % for children aged three, four and five years, respectively. Another study published in Spain reported that of the 121 infants aged three to five years present on the day of screening, there was an incidence of 77,3 % in third graders. In another study carried out in the province of Havana in 2020-2022, 158 infants between two and five years of age were taken from the "William Soler Laeda" children's circle, and of them, 55 were affected with dental caries for 34,8 %." ⁽⁴⁾

Almost all risk factors for CHD are modifiable and can be grouped according to their influence on children, the family, and the community.⁽⁵⁾ Of particular importance in the case of infants is the health of legal guardians and educators, family beliefs and behaviors, and the ability, knowledge, and willingness to acquire and provide the infant with healthy lifestyles and modes of living.

In this context, organizations such as the WHO⁽³⁾ and researchers such as Kenney, Kogan, and Crall⁽⁶⁾ recommend preventive care from early childhood as the best strategy to avoid its appearance, which represents both an opportunity and a challenge for the development of educational programs to help infants acquire healthy habits.

Medical science professionals' approach centered on disease should be changed to a prevention approach based on health, health education, and self-care. To begin with, a salutogenic vision where aspects that generate health as opposed to pathogenesis are addressed, focused on the fact that disease and health are not irreconcilable opposites but somewhat different states within a process in constant transformation.

The aforementioned reveals the need for the design and implementation of promotion, education, and prevention programs for infants, their families, and educators, made up of actions that are structured and systematized using strategies of agreement and coordination, comprehensive stomatological coverage, social participation, permanent training, and social communication, complemented with didactic and promotional materials to facilitate the execution of the actions.

However, according to Gao et al.⁽⁷⁾, most oral health programs are oriented towards normative aspects, with few intervention efforts incorporating other psychological variables and even fewer research studies investigating families' or educators' knowledge and skills.

In this sense, the authors consider that the success of an intervention in infants related to changes in their lifestyles requires empowering legal guardians and educators so that they can inculcate and reinforce healthy

habits in infants. Psychological preparation can, therefore, impact the promotion and education for and by the health of infants, allowing them to maintain good oral and general health and thereby favorably affect their quality of life for proper growth.

This preparation refers to acquiring knowledge and motivation to carry out healthy oral hygiene practices to maintain their well-being and that of the infants under their responsibility and care. Similarly, educators have an essential role in guiding healthy habits for preventing CHD in infants through instruction and awareness of infants on the importance of healthy lifestyles and lifestyles, in addition to communication and coordinated engagement with families.

The joint action of health personnel, educators, and legal guardians depends on infants having access to and the opportunity to transform the health information offered into knowledge, attitudes, and appropriate practices. The analysis of the above allowed the formulation of the following scientific problem: How effective will the educational program "Healthy Smile" be concerning the knowledge about oral health of legal guardians and educators, as well as in the role of the educators of preschool children in the villages of La Demajagua-Atanagildo Cajigal, in the period 2021-2023?

The objective of this research was to determine the effectiveness of the "Healthy Smile" program in terms of knowledge about the oral health of legal guardians and educators, as well as in the role of educators of preschool children in the villages of La Demajagua-Atanagildo Cajigal in the period 2021-2023.

The research results provide a study on the relationship between the level of education, the level of knowledge about oral health, and the role of educators, and an educational program as a proposal to raise the level of knowledge of those legally responsible educators of preschool children. The present research contributes to strengthening the joint effort to preserve the social conquests in health and education, consolidating an indissoluble link not sufficiently achieved in practice. The scientific novelty lies in the proposal of an educational program that contributes to the increase of knowledge on the oral health of legal guardians and preschool educators and the favorable modification of the role they assume in the health of infants.

METHOD

Type of Study

Applied research with a quasi-experimental design of before-after type and a single group was carried out on legal guardians and educators of preschool infants in the villages of La Demajagua-Atanagildo Cajigal, Isla de la Juventud in the period 2021-2023.

Research design

GE: O1 -----X----- O2

X: Application of the educational intervention.

GE: Experimental group.

O1: Test before the Educational Intervention.

O2: Test after the educational intervention.

Population and sample

The population and sample consisted of 86 legal guardians and nine preschool children educators in La Demajagua-Atanagildo Cajigal villages. The units of analysis belonging to the sample met the following inclusion criteria: they had to be legal guardians or educators of preschool infants in the villages of La Demajagua-Atanagildo Cajigal and give their consent to participate in the research (both they and the infants under their responsibility and care).

Variables

Dependent variables: level of knowledge about oral health of legal guardians and educators, source of acquisition of knowledge about oral health of educators, reasons for educators to maintain good oral hygiene.

Independent: "Healthy Smile" educational program.

Interveners: level of education of legal guardians and educators, years of teaching experience.

Methods

Theoretical methods (analytical-synthetic, inductive-deductive, historical-logical analysis, and system approach), empirical methods (observation, documentary analysis, survey, and experimental), and mathematical-statistical methods (descriptive and inferential) were used. The elaboration and presentation of the results were in tables and graphs.

Techniques and procedures

The authors administered a survey on oral health knowledge designed for legal guardians and educators.

Another survey was designed to determine the educators' role regarding the infants' health.

The oral health knowledge survey consisted of 18 questions (evaluation: Good [16-18 points]; Fair [11-15 points]; Bad [6-10 points]; Very Bad [0-5 points]). The survey to determine the role of the educators consisted of 18 questions, including open and closed questions. The two instruments were applied before and after the implementation of the educational program.

An educational program called "Healthy Smile" was designed and implemented in the "Antonio Guiteras" and "Eliseo Reyes" elementary schools and the "Alegres Mineritos" children's circle in the towns of La Demajagua-Atanagildo Cajigal. The same contained 30 sessions aimed at providing knowledge on the oral health of preschool infants and training their legal guardians and educators; its application was for four months, with two weekly frequencies in the academic courses of 2021-2023.

To determine the validity of the data collection instruments and the program, expert criteria were used, among which were included Methodologists of the Municipal Direction of Education of that education, pedagogues of that education and higher education, doctors in Stomatology and Medicine, Specialists in General Comprehensive Stomatology, Orthodontics, Prosthesis, Maxillo-Facial Surgery, General Comprehensive Medicine, Pediatrics, Biostatistics, Higher Education, Masters in Community Oral Health, Stomatological Emergencies, Clinical Trials, Preschool Education and Interdisciplinary Studies of Latin America, the Caribbean and Cuba; Graduates in education of children's circles, psychologists, defectologists and art instructors.

For the reliability of the instruments, a pilot test was applied in the medical office of family 25 of Nueva Gerona to 10 % of the population, who had the same characteristics as the sample, using Crombach's Alpha Coefficient. Validity and reliability were above 90 %, which was interpreted as high.

Techniques for processing and analyzing the results

The data were coded and processed using the SPSS 22.0 statistical package. The statistical analysis used simple frequencies, percentages, and mean and standard deviations to show the individual behavior of the variables under study. Statistical inference tests were applied in the inferential analysis, such as Pearson's nonparametric Chi-square test (χ^2) and the contingency test for nominal and categorical variables. The confidence level for the test was 95 % with an error level $\alpha = 0,05$.

Statistical hypothesis test: Student's t-test.

Decision rule: reject the null hypothesis if $p < 0,05$ (significance level).

Ethical considerations

The data obtained in the study were used in compliance with the Declaration of Helsinki.

RESULTS

There was a predominance of the pre-university level of education (68; 71,579 %) , followed by university students (14; 14,737 %) in the study sample before and after the implementation of the "Healthy Smile" educational program. Before its implementation, a regular level of knowledge predominated in all levels of education (high school: 7 of 13 [53,85 %]; pre-university: 55 of 68 [80,88 %]; university: 11 of 14 [78,57 %]); for a total of 73 people representing 76,842 % of the study sample.

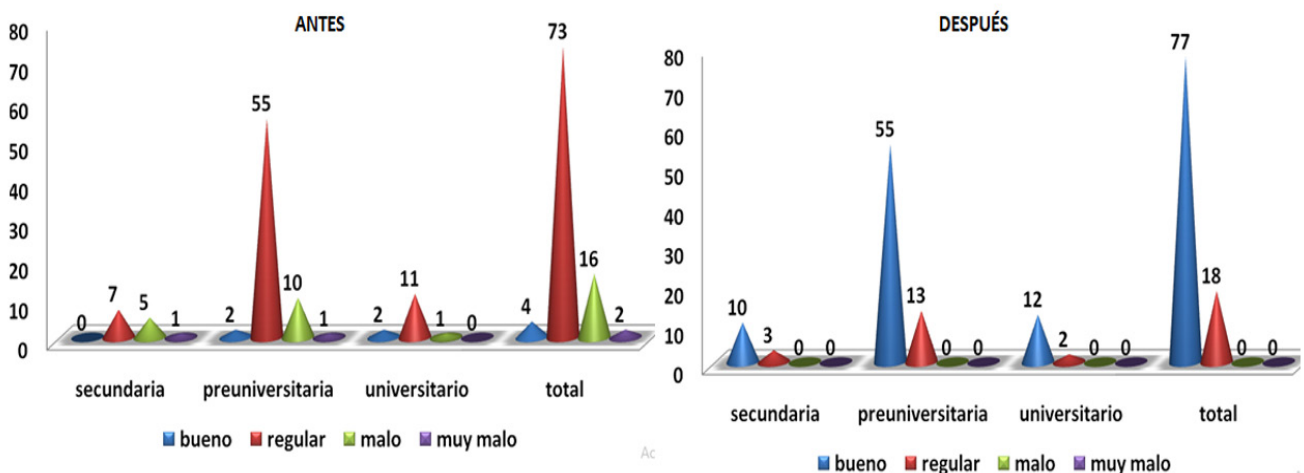


Figure 1. Level of knowledge about oral health according to level of education of legal guardians and educators of preschool children, before and after the implementation of the educational program. La Demajagua-Atanagildo Cajigal, 2021-2023.

After the training of legal guardians and educators through the implementation of the educational program, the level of knowledge of the study sample increased significantly to good at all levels of education (high school: 10 of 13 [76,92 %]; pre-university: 55 of 68 [80,88 %]; university: 12 of 14 [85,71 %]), for a total of 77 people representing 81,053 %, with a tendency to fair (18; 18,947 %). It is essential to highlight that the rest of the study sample at all levels of education obtained a regular level of knowledge about oral health (Figure 1).

In legally responsible persons with secondary level, in the survey applied before, the average score was 10,69, with a standard deviation of $\pm 3,301$, increasing significantly after the educational intervention in the second survey with an average score of 16,23 with a standard deviation of $\pm 1,301$. In legal guardians with pre-university level, in the test applied before, the average score was 12,43 with a standard deviation of $\pm 2,281$, increasing the score after the educational intervention with an average score of 16,41 with a standard deviation of $\pm 1,395$.

In legal guardians and educators at the university level, in the survey applied before, the average score was 13,50 with a standard deviation of $\pm 1,605$, which increased after the educational intervention during the second survey with an average score of 16,43 and a standard distribution of $\pm 1,399$. The higher the level of education of the legal guardians and educators, the higher the level of knowledge acquired (Figure 2).

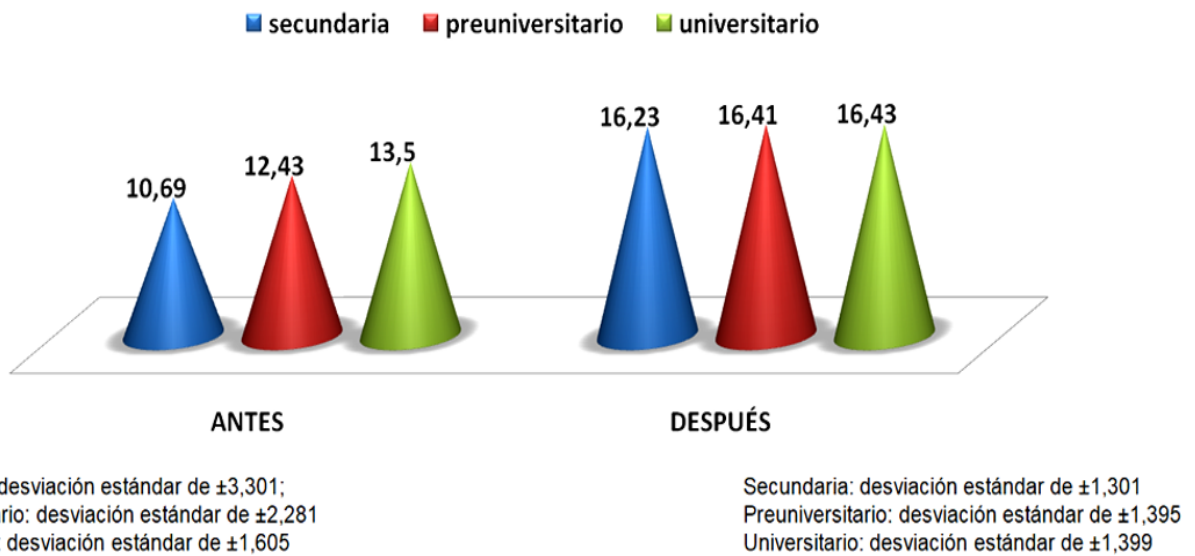


Figure 2. Average score of the level of knowledge according to level of education of legal guardians and educators

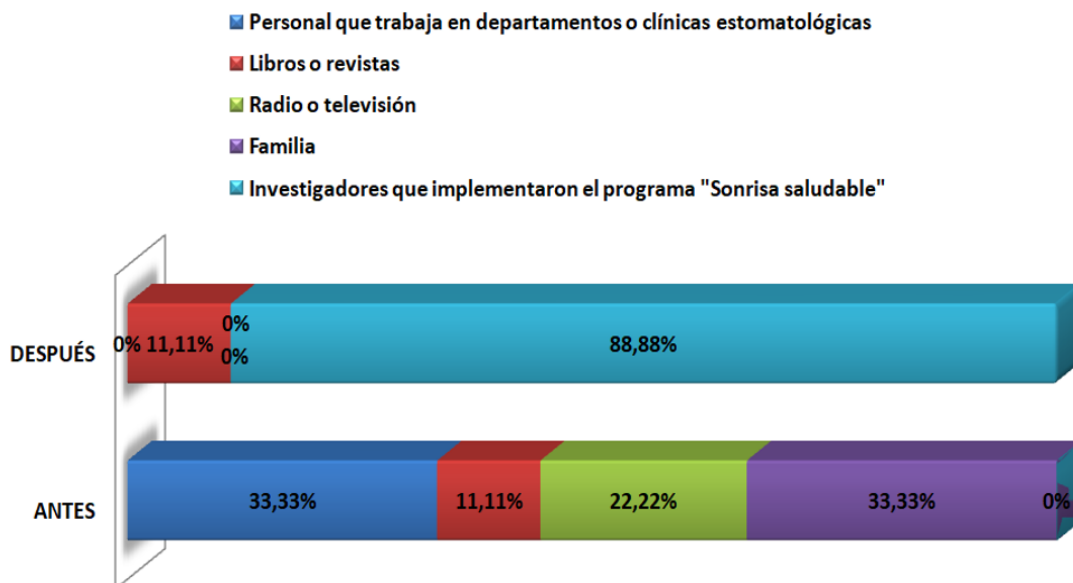


Figure 3. Main source for the acquisition of information on oral hygiene by educators of preschool infants

Role of the educators

Nine educators were surveyed independently, of whom 28,6 % had 1-10 years of teaching experience, 28,5 %

had 11-20 years of experience, and 42,9 % had more than 21 years of teaching experience.

The primary source of information regarding oral hygiene before the implementation of the program was through the personnel working in the stomatological departments or clinics and the family for 33,33 % in both cases. After the program’s implementation, the primary source of information for 88,88 % of the educators was the researchers who implemented the “Healthy Smile” program. Only one of the educators continued to consider books and magazines as her primary source (Figure 3).

Before the implementation of the “Healthy Smile” program, the educators considered caries prevention (6; 66,7 %), gum disease prevention (2; 22,2 %), and setting an example for the children (1; 11,1 %) as the main reasons for maintaining good oral hygiene (Figure 4).

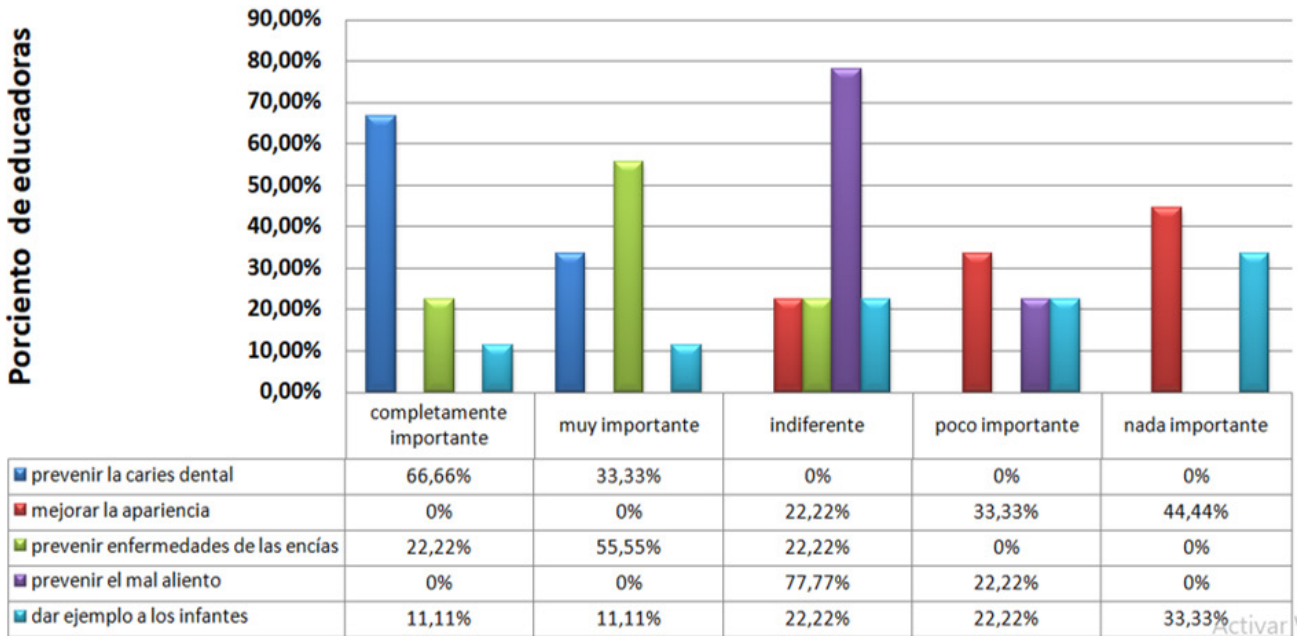


Figure 4. Educators' reasons for maintaining good oral hygiene before the implementation of the "Healthy Smile" program

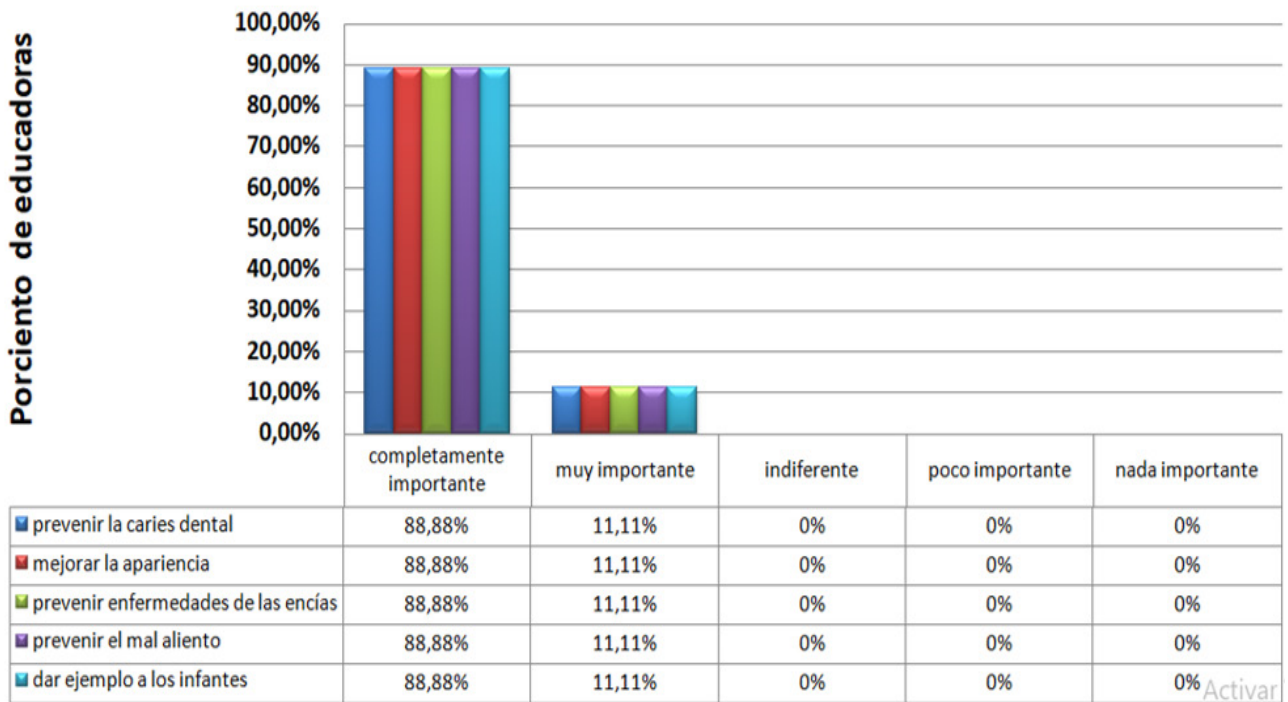


Figure 5. Educators' reasons for maintaining good oral hygiene after the implementation of the "Healthy Smile" program.

After implementing the program, eight educators considered all the reasons for maintaining good oral hygiene to be completely important for 88,9% of the total sample, with only one of them considering it very important, representing the remaining 11,1% of the sample studied. The educators significantly increased the reasons for

the prevention of diseases related to the stomatognathic apparatus, appearance, and personal example to the infants for maintaining good oral hygiene (Figure 5).

Paired t-test

Following the paired t-test, the results showed statistically significant differences in knowledge of caries ($X_1=3,22$, $X_2=3,80$) and children's oral health ($X_1=1,55$, $X_2=3,44$) (Table 1).

Table 1. Comparison of educators before-after implementation of the "Healthy Smile" program: significant results.

Dimension	Item	t	Sig.
Knowledge about dental caries	Caused by bacteria	-3,16	0,013
Knowledge about children's oral health	General health is more important than oral health.	-6,107	0,001

Source: Own authorship.

DISCUSSION

Through the observation method, it was possible to identify the main problems as follows:

- ✓ Insufficient training of those legally responsible and educators regarding health promotion and prevention of oral diseases, specifically with ECC.
- ✓ Insufficient training materials related to the promotion and prevention of oral diseases in the institution; none related to ECC.

Similar results to the present investigation were reported in the educational interventions carried out with a favorable effect on the level of knowledge about oral health among children in the polyclinic Doctor Mario Muñoz Monroy, Cuba,⁽⁸⁾ from 54,7 % (bad before) to 84,37 % (good after); in Sancti Spiritus, Cuba,⁽⁹⁾ where from 53,2% of insufficient knowledge it was increased to 82,3 % sufficient; in Lima, Peru,⁽¹⁰⁾ average knowledge increased from 79,2 % to high in 83,3 % of those involved; in eight primary schools in the district of Huayrapata, Department of Puno,⁽¹¹⁾ where from 65,62 % (fair knowledge before) it increased to 87,5 % (good knowledge after); in Isla de la Juventud, Cuba,⁽⁴⁾ where from 56,7 % (poor) it increased to 86,7 % (good). There was a coincidence with Díaz et al.⁽¹²⁾ in a study carried out in Cienfuegos, where there was a predominance of a pre-university level of instruction.

Regarding the differences between the educators before and after the implementation of the program, the results obtained correspond with other researchers (Chalas et al.⁽¹³⁾, Ehizele et al.⁽¹⁴⁾, Simratvir⁽¹⁵⁾). Studies by Garcia et al.⁽¹⁶⁾ and Diaz⁽¹⁷⁾ also analyzed the oral health knowledge of the teaching staff. They exposed the low rate of information, evidenced by the results of the surveys. Researchers Soto, Sexto, and Gontán⁽¹⁸⁾, in an educational intervention carried out with teachers, observed moderately significant differences regarding the concept of promotion and bad habits as a cause of alterations and highly significant differences regarding stomatological actions.

For educators to raise awareness about oral health in infants and promote a positive attitude on the part of caregivers, they must have adequate knowledge about aspects related to oral health and a favorable attitude towards prevention and intervention strategies. From this, both caregivers and educators will have a better possibility to evaluate the oral hygiene routine of the infants under their responsibility and care. As Naidu and Nandlal⁽¹⁹⁾ point out, this can and should be promoted during the academic year, especially in developing countries.

Health promotion policies and practices of caregivers and educators can make a difference in infants' health and quality of life. In order to fulfill the fundamental objective of society, the man of the future to whom we open the doors of knowledge must be formed as an integral whole; the maintenance of adequate oral health status in their legal guardians and educators should be a premise for this.

CONCLUSIONS

The "Healthy Smile" program was effective in positively modifying the level of knowledge about the oral health of legal guardians and educators and their role in the health of the children under their care.

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CONFLICT OF INTEREST

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