

EVALUATION OF KNOWLEDGE ON ORAL HEALTH, MALOCCLUSIONS AND NON-NUTRITIVE HABITS OF DAYCARE EDUCATORS

ABSTRACT

AIM: The purpose of this study was to evaluate daycare educators' knowledge on oral health, malocclusions and non-nutritive habits and how to address these issues. Educators were also investigated on whether or not they had received previous instructions on oral health and the quality of such information. **MATERIAL AND METHODS:** A survey was conducted using a questionnaire, given to daycare educators of Araraquara (SP, Brazil). The structured questionnaire had close-ended questions, and was divided into three sections according to subject matter. **RESULTS:** Based on the analyzed questionnaires (n=143), most educators showed reasonable knowledge on oral health (72%) and non-nutritive habits (52.4%), although 89.5% of them had received previous instructions on the subject. Chi-square test showed no association between the level of knowledge among educators and the variables: age, type of school and self assessment of knowledge. **CONCLUSIONS:** These professionals need additional information about oral health in order to address these topics through educational practices, since educators are the best suited professionals to teach and motivate children.

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KEYWORDS

Children. Malocclusion. Habits. Health educators.

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INTRODUCTION

During the early years of the child life, it is expected that a great part of them presents some type of non-nutritive oral behavior, or problems like dental caries, dental trauma or gingival inflammation. The lack of family^{1,2} and educators³ information and idea that deciduous teeth do not need proper attention aggravate the situation.

According to the World Health Organization (WHO)⁴, dental caries, periodontal diseases and malocclusions are the three oral pathologies with higher prevalence worldwide. In Brazil, these rates are more elevated⁵ when compared to European and North American populations, due to lack of information and access to public dental care.

In agreement with Moimaz, Saliba and Saliba⁶ (1994), oral health education plays a relevant role in the prevention of oral diseases, as it clarifies the causes, as well as indicates preventive approaches. Thus, motivation and health education are of great importance in the promotion of oral health of the population and should be addressed as early as possible.

The preschool age is a favorable period for motivation work, given that besides manual skills, the child is developing perception of cause-effect relations, contributing to the recognition of the importance of prevention. Based on the received information, children will likely apply the situations experienced at the daycare center to their daily lives and act

as health multiplier agents within their families⁷.

Considering that prevention and education are the best forms of oral health promotion, educators and caregivers play fundamental role in children oral health³, due to their contact time and familiarity with the children.⁸⁻¹¹ The family and the daycare center are the first and most important groups in which the child is inserted in, outlining the child general behavior characteristics^{1,12}. Family and daycare and/or school will unconsciously or not influence in the onset, development and weaning or not, of deleterious behavior, as well as in the child oral health. For example, the influence of the educator's knowledge and attitudes towards sucking habits is determinant in the persistence or elimination of this behavior.

Considering the educator's role of great importance for children's oral health education, the aim of this study was to delineate the knowledge and attitude profile of daycare center educators of Araraquara city (SP, Brazil) on oral health, non-nutritive habits and malocclusions.

MATERIAL AND METHODS

SAMPLE SELECTION:

The present study was submitted and approved (protocol number 1116/10) by the

Ethics Committee of the School of Dentistry of Araraquara (UNIARA, SP, Brazil).

Initially, a list of the total number of daycare centers in the city of Araraquara was provided by the Araraquara District School Board. To reach a significant number of individuals (n), daycare centers were divided into regions (North, South, East, West) according to locations in the city map, supplied by the School Board. Three public daycare centers were selected in each region, choosing daycare centers located distant from each other, avoiding that socio-economical factors could interfere in the study results. Similarly, six private daycare centers were selected; representing 20% of the total sampling number, reproducing the public/private daycare ratio. The number of daycare centers included in the study was calculated in accordance with the least necessary number for statistical relevance and representativeness in the studied population.

Each selected daycare center received a document from the District School Board, with information on the study and authorization of participation. To minimize possible method errors, a pilot study was carried out in two (one public and one private) randomly selected daycare centers from the total sampling, and the questionnaire used in the study distributed to educators.

QUESTIONNAIRE DISTRIBUTION:

A free and informed consent form was given to all educators who work with children between 6 months to 5 years of age. To those who agreed in participating in the study, a structured questionnaire was given, with close-ended questions, aiming to obtain information on the level of educators' knowledge on oral diseases like dental caries, periodontal diseases, as well as attitude in face of dental traumas. Information referring to non-nutritive oral habits and approaches in the presence of this behavior in students were also analyzed. Educators were still questioned whether they received information or professional instruction on habits, malocclusions, traumas, dental caries and other oral diseases. The questionnaires were personally collected fifteen days later. A second collection was carried out 30 days later, to avoid sample deficit that could affect the study. A final sampling of 143 questionnaires was obtained.

The questionnaire was composed of 34 close-ended and 3 open-ended questions, divided in three sections: 1) dental caries, traumas and periodontal diseases; 2) non-nutritive oral habit; 3) self-evaluation of knowledge on oral health and application in preschool education. As analysis parameter, three levels were defined, according to the number of correct answers in sections 1 and 2. Cases with score equal or superior to 80%

were considered appropriate; cases with score between 50-79%, reasonable; cases inferior to 50%, unsatisfactory. Since section 3 of the questionnaire was a self-evaluation, the answers were individually analyzed and not scored, as they could not be considered correct or incorrect.

DATA ANALYSIS:

Data were computed using Excel 2007 software, and subsequently descriptive and statistical analyses were carried out. In the quantitative analysis, the frequency distribution of answers was observed. Questions with multiple choices and only one correct combination were not considered. For statistical analysis, Chi-Square test was used to verify the existence of associations between the study variables ($p < 0.05$). Then obtained results were compared with similar studies in literature.

RESULTS

The results of our study showed that out of a total of 12 public and 6 private daycare centers, 143 educators accepted to participate and returned the answered questionnaire. Although the sample size is significant, the elevated rate of educators who did not return the questionnaire shows their insecurity regarding assessment on subjects like oral hygiene and prevention of alterations in the oral cavity. Nearly all participants were women

(142 women and 1 man), demonstrating that the preschool pedagogy area is almost exclusively feminine in Brazil. The age distribution of the sample (figure 1) demonstrates that most daycare center educators were between 30 and 39 years old (average of 37.8 years). Only 22 teachers work in private daycare centers, whereas 121 work in public ones.

Regarding the level of educators knowledge, section 1 of the questionnaire showed that most educators (103) had regular knowledge on the subject (dental caries, periodontal diseases and oral traumas), while 37 had appropriate knowledge and 3 insufficient or inappropriate knowledge (figure 2). Although the average of appropriate knowledge found in the study was not elevated (25.8%), it was superior to that found by Vassel, Bottan and Campos¹¹ (2008). These authors found that only 8% of the educators presented good background on basic oral health concepts. In another study developed and by Campos, et al.⁹ (2008), the majority (80%) demonstrated unsatisfactory level of knowledge.

Although an elevated number of educators reported to know what dental caries is (97.9%, 140 educators) and affirmed to be able to recognize it (84.6%, 121 educators), it was noticed that only 16.7% (24) could define it correctly and 29.3% (42) could determine the etiology of dental caries (Table 1). These

data evidenced that although educators believe insufficient or mistaken. to know the subject well; this knowledge is

Figure 1. Sample distribution according to age group.

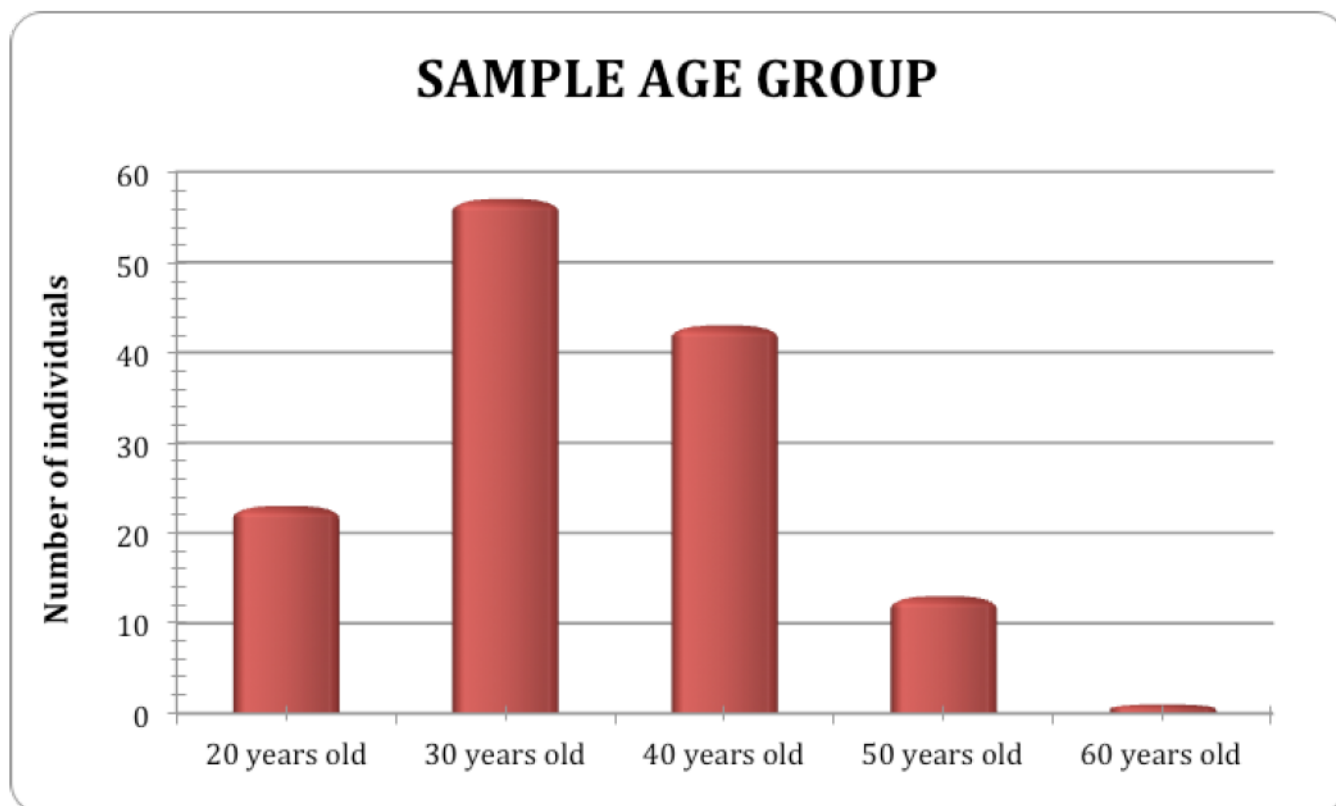


Figure 2. Level of individual knowledge in sections 1 and 2 of questionnaire.

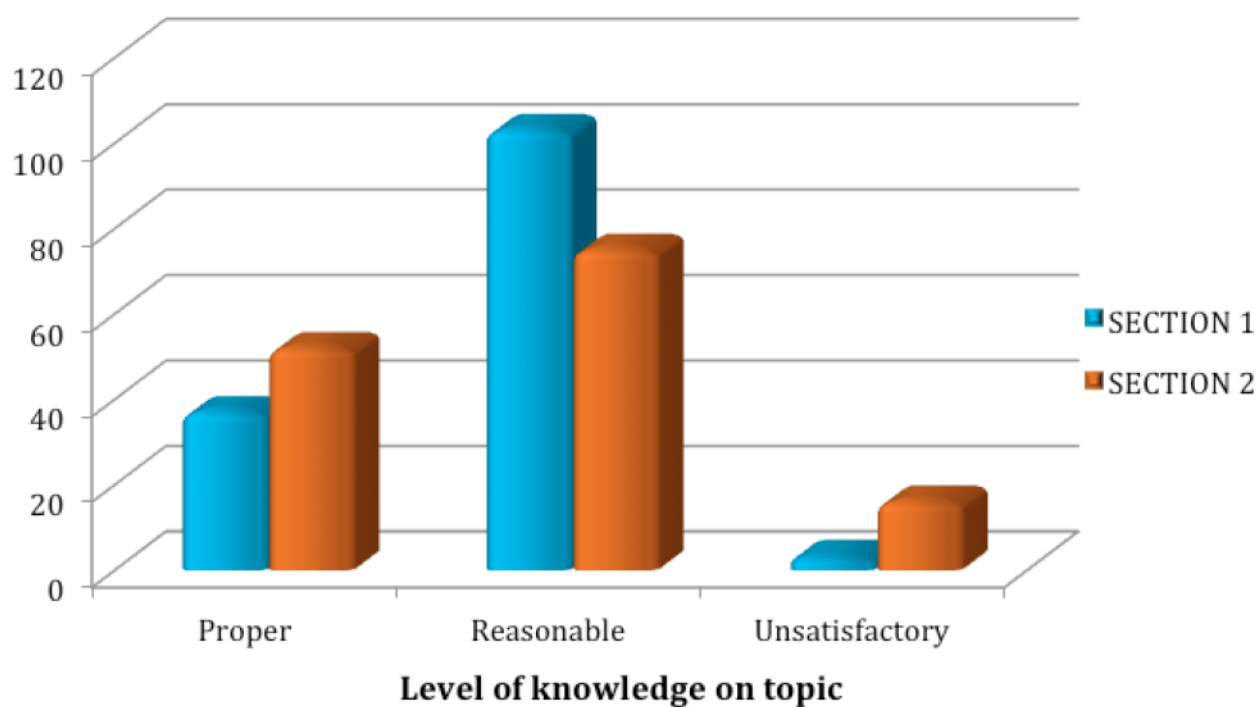


Table 1. Percentage of correct answers for addressed topics.

ADDRESSED TOPICS	% RIGHT ANSWERS
PART 1	
Identification of carious lesion	84.6%
Definition of dental caries	16.7%
Etiology of dental caries	29.3%
Fluoride preventive role	97.9%
Cariogenicity of breast milk	25.8%
Cariogenicity of bovine milk	64.3%
Use of antibiotics	25.8%
Identification of gingival inflammation	71.3%
How to act in face of dental trauma	23.7%
PART 2	
Influence of non-nutritivesucking habits during occlusion development	94.4%
Proper age for non-nutritivesucking habit weaning	18.8%
Identification of open bite	44.0%
Etiologyof open bite	41.9%
Influence of oral breathing during occlusion and facial development	90.2%

DISCUSSION

Dentistry in early childhood has increasingly spread in our society lately; providing educational background to families and children's educators, with the purpose of introducing correct oral hygiene and diet behavior early, so that it becomes part of the child daily routine¹³.

Educators, as well as pediatricians and odontopediatricians play essential role in the formation of the first hygiene concepts and prevention of systemic and oral cavity diseases in early childhood. Due to the time spent with children and close relation and confidence with parents, the teacher's influence, as a knowledge mediator and concept maker, needs appropriate information to be applied in his daily pedagogical life^{3,8-11}.

Lack of information of educators, also applies to the form of dental caries transmission. Less than half of professionals who participated in the study (38%) answered that dental caries is contagious and 41.9% declared that it is an infectious disease. In a study carried out by Figueiredo, Palmi and Rodrigues¹⁴ (1997), only 27% of the investigated health professionals considered transmissibility and 85% that it is an infectious disease. This shows that professionals acting directly in the formation of hygiene behavior in early childhood are not able to instruct parents and their children on the correct methods of avoiding transmission of the dental caries disease.

Routine behavior such as trying the baby food using the same cutlery or blowing the food before offering it to the child are

common practices of parents and caregivers, favoring the transmissibility of dental caries disease during early childhood¹⁵.

Milk cariogenicity is another point that needs to be clarified to educators. Only half of the educators knew about the cariogenic potential of breast milk (25.8%) and bovine or other animal's milk (64.8%). This point of view is also observed in the health area, where only 16% of the pediatricians in the study of Campos et al.¹⁶ (2003) and 29.4% in the study of Coleta, et al.¹⁵(2005) agreed with the cariogenicity issue. In addition, the study of Mani et al.¹⁰(2010) showed that 71% of the interviewed educators did not know that frequent use of the bottle may cause dental caries.

According to several authors the most common form of dental caries appearance in younger children has specific etiology associated to the habit of sleeping with a bottle associated or not to sugary substances.¹⁷⁻¹⁹ This situation is known as baby bottle caries or rampant caries, presenting high frequency and serious character, as the children are very young and damage evolves sharply.

As for use of medication, 74.1% of the educators considered antibiotics cariogenic or did not know exactly how it acts in the oral cavity (Table 1). The justifications reported by educators for such belief are as varied as possible: teeth weakening, calcium loss, teeth darkening and staining, destruction of

organism defenses, presence of strong chemical substances able to damage the enamel layer making teeth vulnerable, and promotion of side effects due to excess antibiotics use. Few participants (28.5%) do not see a relationship between the use of medication and number of dental caries. The literature shows that it is the sugary vehicle in antibiotics, and not its active principle added to the lack of hygiene that might somehow contribute to the appearance of carious lesions^{13,20}.

Even though many educators show lack of information as for the formation process of carious lesions, the great majority (98.6%) believes that dental caries can be prevented and 97.9% recognizes the importance of fluoride in this process, mainly in early childhood (Table 1). Rational fluoride use or fluoride therapy as a supporting mechanism of mineral loss replacement caused by dental caries disease, contributes in the maintenance of mineral teeth balance.¹³ Chaves and Silva²¹ (2002) showed that brushing with toothpaste containing fluoride was responsible for 29.1% dental caries reduction when compared with toothpaste without fluoride.

Nearly all participants (141) know that deciduous teeth, when decayed, need dental treatment. Likewise, more than half of the educators (102) reported being able to recognize a gingival inflammation and 131 of them believe that periodontal diseases can be

present in children (Table 1). In accordance with Cabral²² (1998), both gingivitis, and periodontitis associated to systemic diseases, may be present since early childhood. In consequence of specific intrinsic and extrinsic factors, maintenance of a healthy deciduous teething is essential for aesthetics and functional normality of permanent dentition.

When the topic addressed in the questionnaire was dental trauma, it was noticed that a few educators reported knowing how to proceed in face of it (23.7%), as only 22.3% had been instructed on the subject. Most times, the information on trauma had been given by dentists. This lack of information on this subject is really disturbing, since approximately 25% of the educators have already witnessed some trauma involving children where tooth avulsion occurred.

Children belonging to the higher risk dental trauma group are those between 1 and 3 years of age, when boys are slightly more prone to traumas. In general, children with little age present some peculiarities that influence oral traumas. For example, the anatomical characteristics of this age group, in which the head is proportionally bigger than the rest of the body and frequent protrusion of anterior upper deciduous teeth caused by non-nutritive finger and/or pacifier sucking habits²³⁻²⁵.

As for section 2 of the questionnaire, related to the knowledge on non-nutritive oral

habits, 52 individuals had appropriate level of knowledge on the subject, 75 had reasonable level, whereas 16 individuals had unsatisfactory level of knowledge in the area (Figure 2).

Overall, the knowledge on oral behaviors was superior when compared with topics such as dental caries or trauma. This fact is evidenced by the percentage (94.4%) of educators who think that the use of pacifier or finger sucking may cause occlusion alterations (Table 1). Nevertheless, only 18.8% of the individuals think that the habit of finger or pacifier sucking can be maintained up to 3-4 years of age, as damages caused in the occlusion and arches are reversible with no need for orthodontic treatment.

When non-nutritive sucking habits are removed before the beginning of mixed dentition, in other words, before eruption of the first permanent tooth, there is a great chance that occlusion alterations (for instance, open bite) are reversible. Extension of the oral stage is not physiologic; consequently, sucking habits beyond this period become non-nutritive, contributing to the development of malocclusions.^{26,27} However, this non-nutritive behavior depends on frequency, intensity and duration of movement, besides individual predisposition, age, nutrition and systemic health conditions of the individual^{15,16,28}.

In our sample, 44% of educators reported being able to identify an open bite

and 41.9% could report its etiological factors. As for oral breathing, 90.2% considered that it may influence in occlusion and facial development.

Section 3 of the questionnaire addressed the conduct of educators and application of the acquired knowledge in oral health, showing encouraging rates (Table 2). Of the total, 92.3% of the educators instructed their students on oral health, and 83.9% had children brush their teeth after meals. When questioned on who did the brushing; only 11.1% reported being the teachers responsible for the oral hygiene. Although the child generally wants to do the hygienization alone, it is important to emphasize that before 8 years of age, the fine motor skill is not much developed; therefore, the oral hygiene will not be carried out appropriately, necessitating to be repeated by an adult²⁹.

Although tolerability as for the use of pacifier (66.4%) and bottle (20.2%) during school time has been significant, it was observed that most (69.2%) educators reported to instruct parents on the importance of weaning it (Table 2). Similarly, 89.5% also informed the parents or caregivers to look for a dentist when alterations are noticed in the oral cavity of the children. Even though many parents receive instructions on the subject, a little more than half of children (55.2%) are regularly seen by dentists in public dental offices in the city, according to educators.

Another positive aspect observed in this study is that 89.5% of the interviewed professionals reported to have already received instructions on oral health and/or non-nutritive behaviors from dentists. Such numbers are superior to those found in previous studies showing that 82% to 87% of the participants have already had access to information on the subject.^{8,9,30}

Although the information rate was high, a lower number of educators (63.6%) considered the received directions sufficient and appropriate and 87.4% would like to receive more information on the subject. This shows the growing interest of educators on how to act towards problems in the oral cavity and how to maintain the health and integrity of teeth, given that 90.2% of the educators consider their role important in the oral health of children.

Participants in the present study quoted as means to promote the oral health of students: a) orientate (supervise) children as to appropriate oral hygiene habits (teeth brushing after meals); b) observe the oral cavity, and if necessary, orientate parents to see a specialist; c) develop projects on oral health; d) orientate parents and students as to oral hygiene and behavior; e) develop family projects; f) interfere in baby habits, by not allowing them to suck the pacifier/finger for long periods of time; g) among others.

Chi-square test was used to evaluate whether a variable was able to influence in the presence of another variable; in other words, to determine the presence or not of association between them (Tables 3 and 4). The results showed no association between variables: age group and level of educator knowledge ($p = 0.84$); type of daycare center (private or public) and level of knowledge ($p = 0.79$); and

self-evaluation of oral health knowledge and actual level of knowledge ($p = 0.21$). Thus, it was noticed that the lack of preparation and information on preventive measures and oral health presents homogeneity between educators and does not depend on factors like age, professional experience or place of work.

Table 2. Percentage of positive behavior and presence of oral health instruction.

CONDUCT AND INSTRUCTION	%
Received instructions on how to act in face of a dental trauma	22.3 %
Has already witnesses some trauma where dental avulsion occurred	25.8 %
Orientates children on oral health	92.3 %
Promotes teeth brushing of children after meals	83.9 %
Orientates parents to see a dentist when alterations are noticed	89.5 %
Allows the use of pacifier at daycare center time	66.4 %
Orientates parents on the removal of pacifier and/or bottle	69.2 %
Allows the use of bottle at daycare center time	20.2 %
Received instructions on oral health and/or non-nutritive behavior	89.5 %
Finds the received information sufficient and appropriate	63.6 %
Would like to receive more instructions on the subject	87.4 %
Considers his role as important in the oral health of children	90.2 %

Table 3. Relationship between daycare center type (private or public) and level of knowledge of educators.

Daycare Center	KNOWLEDGE			Total
	Proper	Reasonable	Unsatisfactory	
Private	5	17	0	22
Public	32	83	6	121
Total	37	100	6	143

Table 4. Relationship between received information and level of knowledge of educators.

Received information	KNOWLEDGE			Total
	Proper	Reasonable	Unsatisfactory	
Sufficient	28	61	2	91
Insufficient	7	27	2	36
Total	35	88	4	127

CONCLUSION

Based on the results, it is possible to evidence that the daycare center is a fundamental space to carry out educational measures in oral health, due to being an environment where the child is in a proper age group to learn and absorb new behavior, where teachers are the most recommended agents to teach and motivate children. The creation of integrated pedagogical projects and multidiscipline work is essential so that educators can act jointly and form opinions, through educational practices.

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