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Parental Knowledge on Prevention of Early Childhood Caries and the Effectiveness of a Leaflet Intervention

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Abstract

Background: Parental education on child oral health plays an important role in caries prevention. Leaflets are a means of delivering educational messages. This study aims to evaluate the efficacy of leaflets in improving parental knowledge on prevention of early childhood caries.

Methods: This was a cross-sectional study. Parents of children younger than six years attending a pediatric clinic at a large hospital were asked to complete a questionnaire that noted their sociodemographic characteristics, oral hygiene practices, and knowledge on prevention of early childhood caries, which was given a score out of 20. After reading an educational leaflet, a follow-up phone interview was conducted to evaluate any improvement in parental knowledge. ANOVA and McNemar's tests were used for statistical analysis.

Results: Three hundred and ninety-one parents participated in the study. The average knowledge score pre-intervention was 6.4 out of 20. Approximately 10% of parents were regular dental attenders. Around 12% of parents were aware of the correct age of the child's first dental visit and the correct age to start tooth brushing; 20.5% knew about fluoride varnish; 7.2% understood that sugar-containing snacks should be consumed all at once; and, less than 50% believed that regular dental visits prevent caries. After reading the leaflet, there was a statistically significant improvement in almost all variables evaluating parents' knowledge on prevention of early childhood caries.

Conclusion: Knowledge on prevention of early childhood caries among this sample of parents was very poor. Leaflets were successful in improving parental knowledge. There is a need to distribute such leaflets in healthcare centers and hospitals and to evaluate their efficacy further by comparison with other means.

Keywords: Early childhood caries, prevention, parental knowledge, education, leaflet

1. INTRODUCTION

Early childhood caries (ECC) is one of the most prevalent childhood conditions worldwide, affecting almost half of preschool children, with a reported global prevalence of 48% [1]. ECC was recently redefined at the Bangkok Declaration by a group of international experts as the presence of a primary tooth with one or more carious (non-cavitated or cavitated lesions), missing (due to caries), or filled surfaces in a child under

the age of six years. Despite being completely preventable, ECC affects around 600 million children worldwide with the majority of the disease being untreated [2]. ECC has many negative consequences on children and their families, including growth and development problems, in addition to oral health-related quality of life issues, not to forget the financial burden for treating the disease [3]. In recent years, the main emphasis in dentistry has shifted from treatment and repair to prevention [4]. The first step of prevention involves improving oral health literacy among parents, caregivers, dental and non-dental health care workers.

In the Jordanian population, caries was found to affect 76.4% of children aged six years [5]. This could be attributed to multiple factors, especially the socio-economic status of families as well as the educational level of caregivers [6]. Poor oral hygiene practices, irregular dental attendance, and caries conducive habits in infants and children are all factors shown to be correlated with the high levels of caries among Jordanian children [6].

The environment in which a child develops greatly affects their habits. Parents constitute an important social model in delivering health skills to their children [7]. Parents' negative attitude to diet was found to have an adverse effect on their child's caries increment between the ages of 3–5 years [8]. Fatalistic beliefs of the caregivers about oral health (as measured by their agreement with the statement that "Most children eventually develop dental cavities") was found to be a predictor of future caries increment [9]. On the other hand, parental education on oral health was effective in reducing caries incidence in their children [10].

A previous study showed that expectant mothers in Jordan lacked basic knowledge on ECC prevention and suggested leaflets as their favored means for oral health education [11]. Systematic reviews comparing different oral health education methods have shown some positive results for short-term knowledge acquisition and reduction in plaque accumulation [12]. Despite the improvement in the knowledge of the subjects, the attitude and behavior did not improve proportionately [13]. However, randomized controlled trials evaluating the effectiveness of oral health education as an intervention lacked homogeneity and uniformity. They used different methodologies and outcome measurement tools with varied lengths of follow-up and participant age groups, which makes drawing conclusions in this area impossible. There was no statistically significant difference in knowledge improvement when written, verbal, or videotaped oral hygiene instructions were compared [14]. Similarly, tooth brushing education via lectures, videos and pamphlets reduced the dental plaque index with the same effectiveness [15]. On the other hand, traditional education leaflets were shown to be more effective than E-applications in improving oral health knowledge and oral hygiene among Syrian children aged 10–11 years [16].

Our study aimed to evaluate parental knowledge on ECC prevention, and to evaluate the effectiveness of leaflet intervention in improving this knowledge.

2. MATERIALS AND METHODS

This cross-sectional interventional study took place in the pediatric clinics of Queen Rania Hospital for Children at King Hussein Medical Center. Ethical approval was obtained from the Pharmaceutical and

Clinical Research and Studies Committee and the Research Ethics Committee at the Department of Dentistry/ Jordanian Royal Medical Services. Data were collected over four consecutive weeks in January 2020 by two of the researchers attending the hospital at that time as interns. Participants were parents of children younger than six years attending the pediatric clinic for assessment and management of general health conditions. The research team attended three days a week. Since the study was questionnaire based, all parents present on the days of data collection were approached with no exclusion criteria. According to a sample size calculation equation (available from http://www.raosoft.com/samplesize.html), a sample of 380 participants was needed to achieve a 95% confidence level in the participants' answers, with a 5% margin of error. Four-hundred and twenty-eight parents were approached and consented to take part in the study. Those who agreed to participate signed a consent form and filled in a questionnaire evaluating their knowledge on ECC prevention.

The research team designed the questionnaire after reviewing relevant literature and referring to a previous study by one of the authors [11]. The questionnaire was piloted in a group of ten parents to check its validity and suitability for the sample of the study. The same group of parents were asked to fill in the questionnaire one month later to test its reliability. The questionnaire included six sections and was set in a multiple-choice format (Table 1). Section 1 covered the education and socioeconomic levels of parents and their oral hygiene habits; Section 2 was on parental knowledge of the child's dental development, first dental visit, and fluoride varnish; Section 3 focused on parental knowledge of oral hygiene habits in children; Section 4 considered parental knowledge of caries conducive dietary practices; Section 5 was on parental attitudes to the child's oral and dental health; and, Section 6 covered parental attitudes to treats and rewards.

Twenty questions from the questionnaire were used to generate a knowledge score. Each question was given a score of either 1 or 0 being consistent or not with the current American Academy of Pediatric Dentistry (AAPD) guidelines [3] and pediatric dental literature related to ECC [17]. The highest knowledge score would be 20 and the lowest would be 0. After completing the questionnaire, participants were provided with a leaflet designed by the research team to cover the main aspects of ECC prevention in a simple and easy to read manner. The leaflet was piloted by a group of parents and modified accordingly. It included information about the recommended age for the first dental visit, and proper oral hygiene and dietary practices. Participants were encouraged to read the leaflet more than once. One month later, all participants were contacted by phone and asked to participate in a follow-up interview to re-evaluate their knowledge on ECC prevention. Eleven knowledge questions from the original questionnaire were asked over the phone to cover the main aspects of ECC prevention and the results were compared with the original answers of each participant before reading the leaflet.

Data were processed and analyzed using Statistical Package for the Social Sciences (SPSS version 22, Chicago, IL, USA). An ANOVA test was used to study the correlation between knowledge scores and sociodemographic variables. McNemar's test was used to study the difference in parental

knowledge before and after reading the leaflets. The level of significance was set at $p \leq 0.05$.

Table 1 shows all the questions included in the questionnaire. The questions used for the knowledge score are highlighted and those re-evaluated over the phone interview are underlined.

Table 1. Questionnaire

1- Demographic data and self-reported oral hygiene practices of parents ● What is your relationship to the child? ● How old are you? ● What is your educational level? ● Where do you live? ● How many children do you have? ● How often do you brush your teeth? ● Are you aware of the fluoride concentration in your toothpaste? ● How often do you visit the dentist? ● What was the reason for your last dental visit?
2- Parental knowledge on the child's dental development, first dental visit, and fluoride varnish. ● At what age does the first primary tooth erupt? ● At what age does the first permanent tooth erupt? ● Are all permanent teeth preceded by primary teeth? ● Are you familiar with fluoride varnish for caries prevention? ● At what age should the child visit the dentist for the first time?
3- Parental knowledge of oral hygiene habits in children. ● When should brushing with toothpaste start? ● How often should children have their teeth brushed? ● What is the correct amount of toothpaste to be used for a 3-year-old or younger? ● What is the best time to brush children's teeth? ● To which age should tooth brushing be supervised?
4- Parental knowledge of caries conducive dietary practices. ● How often should a child consume sugar-containing foods/ drinks per day? ● What is the best time to have sugar containing snacks? ● Is it better to divide snacks or have them all at once? ● What is the recommended age to stop bottle feeding? ● Is giving the child a baby bottle throughout the night cariogenic? ● Is consuming fresh juice from a bottle cariogenic? ● Does breast milk contain sugar?
5- Parental attitudes towards child's oral and dental health. ● Does regular tooth brushing prevent caries? ● Do regular dental visits prevent caries? ● Are primary teeth important for the child?
6- Parental attitude towards treats and rewards. ● How would you reward your child after dental visits? ● When your child asks for a snack, what would you offer?

3. RESULTS:

Four-hundred and twenty-eight parents were approached, 391 of them agreed to participate and completed the questionnaire, giving a response rate of 91.4%. Of the participants, 293 (74.9%) were mothers, 86

(22%) were fathers, and the rest n=12 (3.1%) was either grandparents or uncles/aunts who were the primary caregivers of the child.

The average knowledge score was 6.4 out of 20. The highest score was 15 and the lowest score was 2. Table 2 shows the demographic distribution of parents in relation to their mean knowledge scores on ECC prevention. There were no statistically significant associations between any of the sociodemographic variables of the participants and their knowledge scores. The parents' attitudes towards their own oral health were reported as follows; 51.2% of parents (n=203) brushed twice or more per day, 2.6% (n=10) were aware of the fluoride concentration in the toothpaste they used; 84% (n=329) visited the dentist only when problems occurred, 10.8% (n=42) were regular dental attenders, 5% (n=20) had never been to the dentist before; 91.6% (n=340) reported pain/infection as the reason for the last dental visit and 8.4% (n=31) attended for regular checkups. Table 3 shows the questions used for generating the knowledge score, the correct answers, and the number and percentage of parents with correct answers.

Table 2. Distribution of socio-demographic variables of parents by knowledge score

Variable		n (%)	Mean Knowledge Score	*p* value
Age	20–29	91 (23.3%)	5.9	0.59
	30–39	180 (46%)	6.5	
	40–49	98 (25%)	6.8	
	>50	21 (5.4%)	6.1	
Education	High school unfinished	68 (17.4%)	6	0.13
	High school	185 (47.3%)	6.4	
	College education	127 (32.5%)	6.7	
	Postgraduate education	11 (2.8%)	6.3	
Area of residence	North	147 (37.6%)	4.9	0.99
	Capital	119 (30.4%)	8.1	
	Middle	107 (27.4%)	6.7	
	South	18 (4.6%)	5.8	
Number of children	1	35 (9%)	5.9	0.48
	2	90 (23%)	6.5	
	3	76 (19.4%)	6.6	
	4 or more	190 (48.6%)	6.8	

The questionnaire also included questions related to parental attitude to rewarding their children after dental visits (Section 6 in the questionnaire). The methods used by parents were as follows: 228 (58.3%) would give sugar-containing snacks, 98 (25.1%) would buy toys, 42 (10.7%) would take them to play areas, and 23 (5.9%) would use encouraging words. When children asked for a snack between meals 367 parents (93.8%) reported giving their children either confectionery, juice, or chips. As an alternative 214 parents (54.7%) would offer fruits, 132 (33.8%) would offer vegetables, and 45 (11.5%) would give popcorn.

Table 3. Distribution of parents (n=391) by responses to each knowledge question

Question Number	Question	Correct answer*	Number of parents with correct answers (%)
1	At what age should the child visit the dentist for the first time?	Around the child's first birthday	46 (11.7%)
2	When should brushing with toothpaste start?	With the eruption of the first primary tooth	45 (11.5%)
3	How often should children have their teeth brushed?	Twice daily or more	265 (67.8%)
4	What is the correct amount of toothpaste to be used for a 3-year-old or younger?	Smear or rice size	198 (50.6%)
5	What is the best time to brush children's teeth?	At night (before bedtime)	201 (51.4%)
6	To which age should toothbrushing be supervised?	At least 7 years	111 (28.4%)
7	How often should a child consume sugar-containing foods/ drinks per day?	3–4 times daily	72 (18.4%)
8	What is the best time to have sugar containing snacks?	Right after main meals	61 (15.6%)
9	Is it better to divide snacks or have them all at once?	All at once	28 (7.2%)
10	At what age does the first primary tooth erupt?	0–6 months	220 (56.3%)
11	At what age does the first permanent tooth erupt?	6–7 years	128 (32.7%)
12	Are all permanent teeth preceded by primary teeth?	No	78 (19.9%)
13	Are you familiar with fluoride varnish for caries prevention?	Yes	80 (20.5%)
14	What is the recommended age to stop bottle feeding?	12–18 months	132 (33.8%)
15	Does regular toothbrushing prevent caries?	Yes	233 (59.6%)
16	Do regular dental visits prevent caries?	Yes	192 (49.1%)
17	Are primary teeth important for the child?	Yes	121 (30.9%)
18	Does breast milk contain sugar?	Yes	84 (21.5%)
19	Is giving the child a baby bottle throughout the night cariogenic?	Yes	95 (24.3%)
20	Is consuming fresh juice from a bottle cariogenic?	Yes	100 (25.6%)

* References: [3, 17]

One-hundred-five parents (27% of the original sample) were available and agreed to participate in the phone interview. They were asked 11 questions from the original 20 questions used to generate the knowledge score to cover the main aspects of ECC prevention. Figure 1 shows the difference in the percentage of parents with correct knowledge before and after reading the leaflet. The knowledge of parents improved, with the difference in knowledge before and after reading the leaflet being statistically significant for all questions except for two; the knowledge of the frequency of tooth brushing and the knowledge of the amount of toothpaste used for a child aged three years and younger.

At the end of the phone interview, parents were asked to report their preferred method for delivering oral health education messages whether it being leaflets, social media, face to face visits, television shows or phone calls. Their answers are presented in Figure 2.

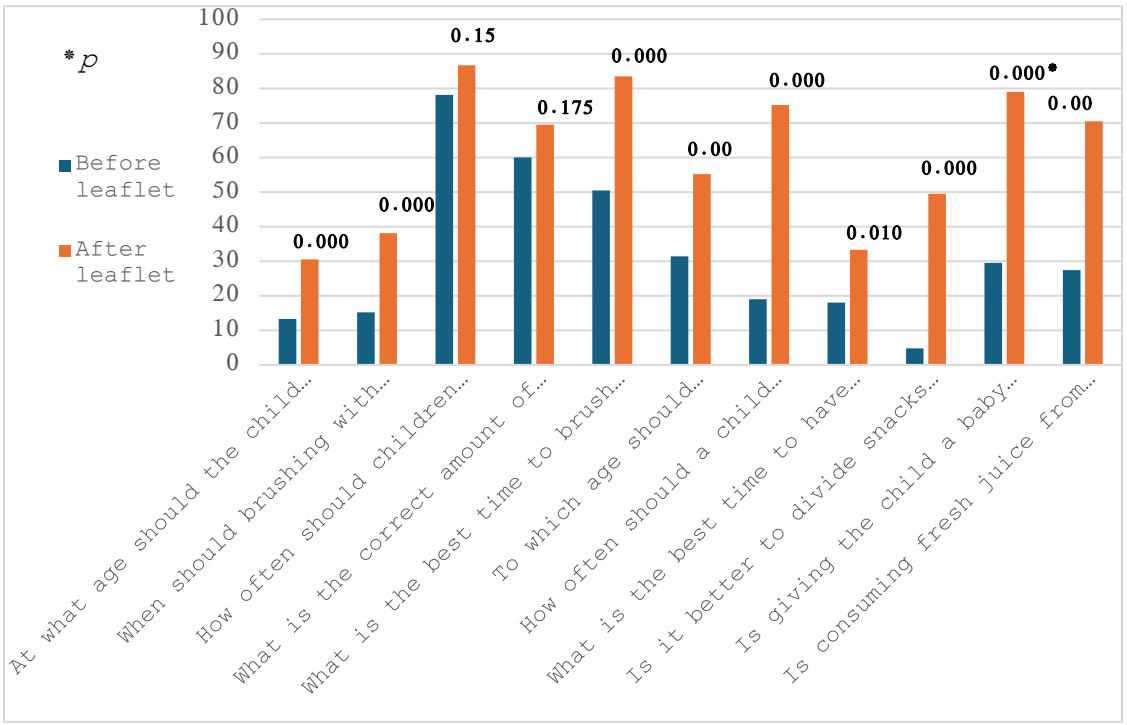

Figure1: Comparison of the percentage of parents with correct knowledge of ECC prevention before and after reading the leaflet for 11 knowledge questions

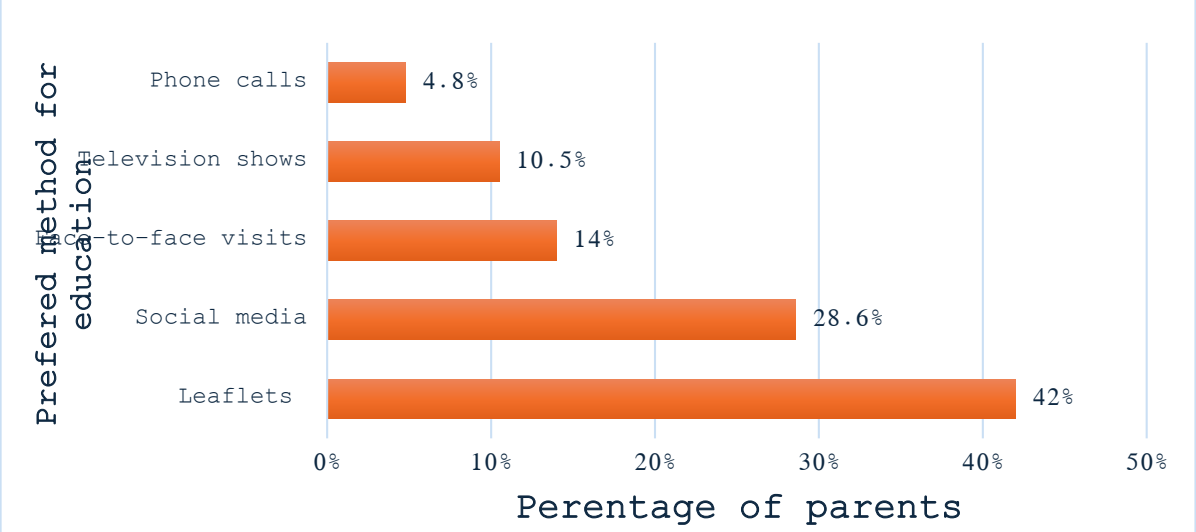

Figure 2: Distribution of participants according to their preferred method for oral health education

DISCUSSION

The results of this study showed that the group of participating parents lack basic ECC prevention knowledge, consistent with findings from countries around the world conducting similar research [18, 19].

The response rate was high (91.4%), indicating that parents are willing to

participate in research and were enthusiastic about improving their knowledge.

The average knowledge score was 6.4 out of 20, which is very low and not even close to a passing score. There was no statistically significant association between any of the socio-demographic variables and the knowledge score. Parents with higher education levels have similar knowledge scores with those with lower levels of education, which is consistent with a previous study conducted in Jordan [11]. On the other hand, awareness regarding dental health was higher in parents who had more education and qualifications [20, 21]. The mean knowledge score was higher for parents who had a greater number of children, but this was not statistically significant. Similar results were reported in another study; however, dietary and hygiene practice scores were highest among parents who had one child [20]. Parental child-related oral health knowledge tends to build up with time as parents experience more with every new child. However, it seems that their ability to translate this correct knowledge into practice decreases when they have more children and more responsibilities towards them.

The disappointingly low knowledge of parents in this study may be attributed to the absence of proper oral health education. A study conducted in Jordan has shown that general dental practitioners demonstrated poor knowledge in terms of delivering caries preventive advice [22]. Moreover, medical students in Jordan showed poor knowledge on caries prevention in children [23], which means that neither general dental practitioners nor medical doctors are contributing to the oral health education of parents. In this study, parents' knowledge is poor in most aspects of child-related oral health; for example, only 11.7% of parents know that a child's first dental visit should be around his/her first birthday and a similar percentage know that tooth brushing should start with the eruption of the first tooth [17]. Although 67.8% of parents realized that children's teeth should be brushed twice a day, only half were aware that night-time is the best time for tooth brushing [3]. Surprisingly, only 28.4% of parents recognized that tooth brushing should be supervised up to at least seven years of age and most parents thought that their children could efficiently brush on their own from about three years of age. Only 20.5% of participants were aware of fluoride varnish and its well-established role in caries prevention [24]. Parental knowledge regarding anticariogenic dietary practices was no better. Only 18.4% of parents recognizes that 3–4 food/drink intakes per day is ideal [25]. Worse, only a few parents (15.6%) understood that the best time to have a sugar-containing snack is after a main meal and even fewer parents (7.2%) believed that sugary foods/drinks should be consumed all at once. Most parents thought that sugar containing foods/drinks should be divided into portions and consumed over the day and between meals. It is well known that frequent in-between meal consumption of sugar-containing snacks or drinks (e.g., juice, formula, soda) increases the risk of caries [25]. Avoiding frequent consumption of juice or other sugar-containing drinks and limiting cariogenic foods to mealtimes are among the recommendations for preschool children based on the principles of cariology [25]. Only 33.8% of parents think that bottle feeding should stop between 12–18 months of age [3]. The majority believed that children can safely continue bottle feeding, even at night, until they are three years of age. Moreover, only 21.5% of parents believed

that breast milk contains sugar, and around a quarter understood that consuming milk throughout the night or fresh juice from a bottle are cariogenic behaviors. It is well documented that bottle feeding at night, frequent bottle feeding during the day, and late weaning can lead to caries [26].

Regarding dental development, a little more than half (56.3%) knew that the first primary tooth erupts at around six months of age. This percentage dropped to 32.7% for knowledge of the eruption time of the first permanent tooth. Unfortunately, only 19.9% of parents understood that not all permanent teeth are preceded by primary teeth. This, combined with the poor knowledge of the eruption time of the first permanent tooth, explains the high percentage of caries seen in first permanent molars in 7–8-year-old children [27]. Parents are usually surprised that their child has caries in a permanent molar when they are sure that no primary molar has exfoliated before. Improving parental knowledge in this regard is very important to help prevent caries in newly erupting first permanent molars.

Parental attitudes to child oral heath are generally unfavorable. Around 60% of the parents believed that regular tooth brushing prevents caries. Half thought that regular dental visits can prevent caries and only 31% agreed that primary teeth are important to the child.

Dental visits for treatment of caries are likely to be a stressful experience for children and their parents as dental fear and anxiety are common among children and adolescents which is mainly related to pain [28]. To help children get through those visits successfully and achieve the desired outcome, parents sometimes use rewards. As a reward, more than half of parents in this study reported giving their children a sugar-containing snack. Between meals, most parents reported giving their children either confectionery, juice, or chips when they asked for something to eat. As an alternative, a little more than half of parents would give fruits and one third would offer vegetables, while only a few would offer popcorn. It is very important that parents understand the importance of non-sugar containing snacks between meals and that the consumption of any sugar containing food/drink should ideally be within or immediately after a meal [26].

Oral health education is an integral part of caries prevention and can occur by different means. The use of leaflets to deliver educational messages is a well-established and successful method. In this study, the knowledge of the same group of parents was compared before and after reading the leaflet. Their knowledge of ECC prevention significantly improved in all questions asked except for two, indicating the success of the leaflet in delivering the intended educational messages. The difference in parental knowledge was not statistically significant in the knowledge of the frequency of tooth brushing and the amount of toothpaste used for a three-year-old or younger. The percentage of parents with correct knowledge regarding the frequency of tooth brushing before reading the leaflet was high, possibly again due to social desirability bias. Unfortunately, this does not necessarily reflect their behavior. Similarly, the percentage of parents with correct knowledge regarding the amount of toothpaste to be used for a child aged three or younger was high before reading the leaflet and improved slightly after reading the leaflet. This could be explained by the fact that most parents know that younger children are unable to spit and are afraid that they will swallow the toothpaste. Therefore, they correctly chose

the least amount of toothpaste [29]. Although the difference in parental knowledge before and after reading the leaflet was statistically significant, the percentage of parents with correct knowledge after the leaflet intervention was still less than half in some aspects including: knowledge of the age at the first dental visit; knowledge of the time to start brushing; knowledge of the best time to eat sugar-containing snacks; and, knowledge of whether sugar containing food is best consumed at once or divided. This means that important messages on caries prevention in children cannot be delivered by leaflets alone and that other means of oral health education should also be used.

The relatively limited number of pediatric dentists available to deliver face to face child related oral health education combined by the low number of patients attending the pediatric dentist regularly makes it necessary to find other means of nationwide education. Leaflets are a relatively cheap and easily accessible method of education. Having friendly and easy to read leaflets readily available in waiting rooms in all healthcare centers for children and adults to look at and read should be encouraged. However, one mode of education is not enough given the very poor knowledge of parents as demonstrated by the results of this study. Leaflets should be supported by other methods including television and radio talk shows. Given the recent popularity of social media and the ease of access to smart devices here in Jordan [30], the option of delivering oral health education messages through social media should be investigated and compared to the more conventional use of leaflets.

Limitations

The sample was collected from a single center; however, it is likely to represent Jordanian parents with young children in terms of age and education according to the 2017–2018 Jordan Population and Family Health Survey [31]. The study was based on a questionnaire where the social desirability bias may have affected the responses of some parents. Not all the parents were reachable for the follow-up phone interview. Some refused to participate because they did not have time, some said they did not get the chance to read the leaflet, and some gave other reasons. To make the follow-up phone interview as short as possible and acceptable to the participants, not all the questions from the original questionnaire were asked. Therefore, knowledge scores after reading the leaflet could not be generated and compared with the pre-intervention scores. However, the percentages of correct answers for the questions answered over the phone were compared with their percentage before reading the leaflet and most have shown a significant increase. Future research should focus on conducting randomized controlled trials to compare two or more methods of education rather than comparing the effectiveness of a single method on the same group of participants.

CONCLUSION

Parental knowledge on ECC prevention is very poor and leaflets were effective in improving this knowledge. To confirm the success of leaflets in improving parental knowledge, future research should compare this mode of intervention with other modes.

Declarations

- Ethics approval and consent to participate:

Ethical approval was obtained from the Pharmaceutical and Clinical Research and Studies Committee and Research Ethics Committee at the Department of Dentistry/

Jordanian Royal Medical Services. Approval code: 13/2019/22

- **Consent for publication:** NA
- **Availability of data and material**: The datasets **used** and/or analyzed during the current study are available from the corresponding author on reasonable request.

- **Competing interests**: The authors declare no conflict of interest.

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- **Authors' contributions:** All authors have made substantive contribution to this study and/or manuscript, and all have reviewed the final paper prior to its submission."

Rawan ElKarmi performed study supervision and design, data collection, data analysis, and manuscript writing.

Ahmad AlJafari performed study design, data analysis, and manuscript writing.

Sarah Haddad and Dina Al Soud performed data collection and analysis.

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- **List of abbreviations**
  - ECC: Early childhood caries
  - AAPD: American Academy of Pediatric Dentistry

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معرفة الأهل عن الوقاية من تسوس الأسنان المبكر وفاعلية التدخل بالكتيبات التعليمية

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الملخص

الخلفية: تثقيف الأهل عن صحة الفم له دور كبير في الوقاية من التسوس. الكتيبات التعليمية هي وسيلة لتوصيل المعلومات الصحية. تهدف الدراسة لتقييم فاعلية الكتيبات التعليمية في تحسين مستوى المعلومات لدى الأهل عن الوقاية من تسوس الأسنان المبكر.

الطرق: هذه دراسة مقطعية شملت أهالي الأطفال تحت عمر ال 6 سنوات الذين أحضروا أطفالهم الى عيادة الأطفال في إحدى المستشفيات الكبيرة. طلب من الأهالي تعبئة استبانة لتوثيق معلوماتهم الديمغرافية بالإضافة الى سلوكياتهم الصحية الفموية ومعرفتهم عن الوقاية من تسوس الأسنان المبكر والتي تم إعطاؤها علامة من 20. بعد قراءة الكتيبات تم التواصل مع الأهل عبر الهاتف لتقييم أي تحسن في معرفتهم. تم استخدام الاختبارات الإحصائية (Anova and McNemar's).

النتائج: شارك بالدراسة 391 من الأهل. معدل علامة الأهل قبل قراءة الكتيبات كانت 6.4 من 20. تقريبا 10% من الأهل يزورون طبيب ألسنان بشكل دوري. قرابة 12% من الأهل يعرفون العمر الصحيح لزيارة طبيب الأسنان للمرة الأولى؛ 20.5% يعرفون ما هو طلاء الفلورايد؛ 7.2% يعرفون أن استهلاك الوجبات التي تحتوي على سكر يجب أن يكون على دفعة واحدة دون تقسيم وأقل من 50% يؤمنون أن زيارة طبيب الأسنان بشكل دوري يقي من التسوس. بعد قراءة الكتيبات تحسنت معرفة الأهل في معظم جوانب الوقاية من تسوس الأسنان المبكر.

الخاتمة: المعرفة عن الوقاية من تسوس الأسنان المبكر في هذه المجموعة من الأهل كانت ضعيفة جدا. الكتيبات كان لها دور فاعل في تحسين هذه المعرفة. هناك حاجة لتوظيف مثل هذه الكتيبات في المراكز الصحية والمستشفيات وهناك أيضا حاجة لمقارنة فاعلية الكتيبات مع الوسائل التثقيفية الأخرى.

الكلمات الدالة: تسوس الطفولة المبكرة، الوقاية، معرفة الوالدين، التعليم، النشرة .