

**ORIGINAL ARTICLE****The Effectiveness of Educational Pamphlets on Mothers' Knowledge about child's first dental visit and Cooperation of 3-7 years old children in the first dental visit****Mehdi Ghandehari Motlagh<sup>1</sup>, Samaneh Sarshar\*<sup>2</sup>, Farideh Baghaei<sup>2</sup>**<sup>1</sup>Pediatric Dentistry Department, school of Dentistry, Tehran University of Medical Sciences, Tehran, Iran<sup>2</sup>Community Oral Health Department, School of dentistry, Tehran University of Medical Sciences, Tehran, Iran

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**ABSTRACT**

*Background: The most important issue in pediatric dentistry is the first dental visit of children. Parents and specially mother's education is very important before dental appointment and could be an effective factor to achieve successful dental experience for children. The purpose of this study was to determine the effectiveness of educational pamphlets on Mothers' knowledge about child's first dental visit and cooperation of 3-7 years old children in the first dental visit. 238 children between 3-7 years and 80 mothers of referrals to the Department of Pediatric dentistry, dental school of Tehran University of Medical Sciences were selected and were divided into comparison and intervention groups. Mothers received pamphlet before first dental visit and they were asked in both groups to answer a questionnaire before and after offering the pamphlet. In the first dental visit the cooperation of each child was specified. The obtained data was analyzed using the statistical program SPSS version 20. Also Children's cooperation was evaluated with Mann-Whitney test and Chi-square. Questions concerning the pre-test and post-test was evaluated using Wilcoxon signed. The level of significance test, were considered less than 0/05. Total cooperation rate in the intervention group was 96.2% and in the comparison group was 90.8% respectively. There was no significant difference between two groups. The difference of mother's knowledge before and after reading the pamphlet in the intervention group, in compare with comparison group was significant in all 11 questions in questionnaire (for all 11 questions:  $p < 0/05$ ). Due to the effectiveness of this awareness method, using pamphlets is functional on increasing maternal awareness about the importance of the first dental visit. Providing educational pamphlet for mothers of 3 -7 years old children was not effective on children's cooperation in the first dental visit.*

**Keywords:** educational pamphlet, children's cooperation, first dental visit

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**INTRODUCTION**

The foundation of pediatric dentistry is the ability to manage children and communicate with children at all steps of treatment. This ability is a precondition to provide better children's dental needs [1-3]. The most important issue in pediatric dentistry is the first dental visit of children [4,5]. Parent's education is very important before dental appointment and could be an effective factor to achieve successful dental experience for children. The studies have showed that parent's educational programs, teach them to manage their children's behavior and empower them to participate in society [1, 6].

Mothers are the most influential person in children's fear of the dentist [4, 7]. So it seems that the best way is to prepare mentally disturbed child by his/her mother. However, the dentist must provide a mechanism for this purpose otherwise preparation will not have its desired effect [8].

As a regard to the most important role of mothers in the formation of child's personality and development of his/her behavior patterns and also the definite relationship between mother's stress and child's

behavior [4, 6, 7, 9]; Therefore, mothers should know that they have an important role in the treatment of their children and their participation is essential for achieving the ideal treatment [4].

Despite the importance of mother's education and its effect on cooperation and behavior of children during dental treatment, there were not a lot of studies in this field and this issue needs more attention and research. The contents give the dentist a good reason to educate parents about the value of child's first dental visit and achieve better child's cooperation in dental treatment. In this regard, the purpose of this study was to determine the effectiveness of educational pamphlets on Mothers' knowledge about child's first dental visit and cooperation of 3-7 years old children in first dental visit.

## **MATERIAL AND METHODS**

To investigate the effect of maternal education on cooperation of child's in first dental visit, educational pamphlet was prepared and in its design the emphasis was on "reducing maternal concerns of child dental work", "Training on how to answer children's questions", "learning the appropriate response to the child's probable negative behaviors" and "Training for the preparation and motivation of child for the first dental visit". In preparation of this pamphlet, we have cooperated with psychologist and a medical education consultant to write and convey concepts better and more effectiveness of issues. Also in the design of pamphlet, the pamphlet of Pediatric Dentistry association entitled "Children first dental exam" was used.

In this study, 238 children between 3-7 years that referred to the Pediatric dentistry Department, school of dentistry, Tehran University of Medical Sciences were selected to get appointment for December 2012 to May 2013. Among this group, 80 mothers were randomly selected to evaluate the effectiveness of pamphlets on maternal knowledge. Children with the following criteria were included:

- 1- Lack of any common disease
- 2- Lack of History of hospitalization
- 3- Lack of traumatic events History (earthquakes, severe accident, stolen, be witness of the crime)
- 4- Lack of Psycho-pathological problems history in family (parents drug abuse, death of a parent, parental separation)
- 5- Not having any psychiatric disorder and anxiety
- 6- Not having previous dental visit

It should be noted that moreover the educational pamphlet of the intervention group, the other pamphlet was considered entitled "preventive orthodontics" for comparison group. After obtaining written consent from mothers, they received an envelope containing pamphlet.

The mothers were asked to complete the questionnaire, including 3 below:

- 1- Social and demographic characteristics of mother
- 2- Demographic and social characteristics of child
- 3- Mother's prediction of the child's behavior on the dental chair

The questionnaire was prepared to evaluate the effect of pamphlet on mother's knowledge before and after offering pamphlet. To evaluate the reliability and validity, the questionnaire was available for 3 faculties of the pediatric Department and a psychologist. Furthermore, they were asked to respond to questions, express their opinions and their corrections. To check the validity of contents after collection the questionnaires and review, they agreed on the various items and the final questionnaire was regulated. Face validity, was investigated by a statistician and 3 of the faculties.

The questionnaire contains 11 questions whose answers were in Likert scale as options: "quite agree", "I agree", "I do not know", "I disagree" and "quiet disagree". The mothers were asked in both groups to answer the questions before and after offering the pamphlet. The pre-test was done when mothers with children came for the first time to get an appointment for the first dental visit and the post-test was done at child's first dental visit. No time limitation was intended to answer questions; however, it was noted that each of mothers, answer the questions lonely and without consultation with others.

The operator delivered the pockets to mothers of both group (intervention and comparison) when mothers with children came for the first time to get an appointment for the first dental visit and noted each pocket's code with child's name. In the first dental visit by Final year dental students, oral health education and brushing was done with behavior shaping management techniques using Tell-show-do.

Before meeting of student and child, all the people were familiar with research methods during a explanatory session to match the assessment of students as possible.

The test to determine the level of compliance of the child according to 4 degree index of Frankle scale (table 1) was attached to the child's records and each student was asked to score that and then delivered the test paper to the secretary.

This test included 5 steps in checking the compliance of the child: “how to separate of mother”, “how to enter the treatment room and sitting on dental chair”, “how to open mouth”, “how to communicate with dentist” and “how to accept the prize”. Emphasizes that the questionnaire was done for assessing the cooperation of both intervention and comparison groups. Students, Secretary and operators none of them didn't know the group of children.

Finally, considering all steps of child's treatment in the first session and rating child's cooperation in every phase of the work, the cooperation of each child was specified.

Due to the 5 steps in the evaluation of child's cooperation in the study, child's behavior scores ranging from -10 to +10 were calculated numerically (table 2).

The statistical consultant separated the intervention and comparison group with access to the code of packets delivered to mothers. Considering that every child was in the intervention group or the comparison, Relation of maternal education through pamphlets and cooperation of children was evaluated. The obtained data was analyzed using the statistical program SPSS version 20. Also Children's cooperation was evaluated with Mann-Whitney test and Chi-square statistical analysis methods. Questions concerning the pre-test and post-test were evaluated using Wilcoxon signed. The level of significance test was considered less than 0/05.

**Table 1- The criteria of determination of children behavioral score in first dental visit**

Behavioral variables	Children's reactions	behavioral score
How to separate of mother	1-Inseparable from the mother, with tears and fear	--
	2-not leaving mother's hands and unwilling to separate	-
	3-Drop the mother's hands and separation with delay caution	+
	4-Separation from the mother willingly and happily	++
How to enter the treatment room and sitting on dental chair	1- With tears and fear and extreme negativism	--
	2-No desire with distemper	-
	3-With desire but with caution	+
	4- With joy and interest	++
How to Open the mouth	1-Crying and put the hand on mouth	--
	2-opening the mouth despite initial reluctance	-
	3-Opening with caution	+
	4-Open mouth at the first request	++
How to communicate with the dentist	1-There was no verbal and nonverbal answer but cry	--
	2-There was no verbal and nonverbal answer but not crying	-
	3- nonverbal answer	+
	4- verbal answer	++
How to accept the prize	1-Failure to accept the prize and would like to leave as soon as possible	--
	2-Accept the prize reluctantly, and tend to leave the area as soon as possible	-
	3- Accept the prize with caution	+
	4-Happily accept the prize and thank	++

(++) equal +2, (+) equal +1, (-) equal -1 and (--) equal -2

**Table 2- The accommodation criteria of Behavior point domain**

Frankel's scale	Behavior point domain
Quite negative	-5 to -10
negative	-5 to 0
positive	0 to 5
Quite positive	5 to 10

**RESULT**

A total of 238 3-7 years old children were studied. 119 patients were in the intervention group and 119 in the comparison group. 34 children were not present at the appointed time for the first dental visit and were excluded from study that 21 people were from comparison group and 13 people were from

intervention group. Also from 80 mothers entered the study, 9 people were not present at the time for their child's first dental visit and were excluded that 7 people were from comparison group and 2 were from intervention group. Finally, 38 people from comparison group and 33 people from intervention group completed the questionnaire in the first dental visit. With evaluating the obtained data from mother's questionnaire, we found that both groups were almost similar from aspects of: gender, age distribution, maternal education, birth intervals, going to the kinder garden and choosing a therapist (table 3).

The results of the child's cooperation in 5 steps were published in Table 4. The child's cooperation in separation of mother step for intervention group was 90.6% and for comparison group was 76.5%. The results have showed educational pamphlet for mother have a significant effect on 3-7 years old children's cooperation in the separation step at the first dental visit (P= 0.006). But there was no significant difference between children's cooperation rate in other stages of two groups in the first dental visit (p> 0/05), (table 5).

Finally, with respect of all 5 steps in first dental visit, total cooperation rate in the intervention group was 96.2% and in the comparison group was 90.8% respectively.

Despite 6% improvement in children's cooperation for intervention group there were no significant differences in the level of children's cooperation between two groups in the first dental visit (table5).

Analysis the data of maternal responses to questions in the pre-test and post-test have showed that in the intervention group, the difference of mother's knowledge before and after reading pamphlets about preparing children for the first dental visit in compare with comparison group was significant in all 11 questions.( for all 11 questions : p< 0/05). While there were no differences in the level of awareness of comparison group in any of the questions.

**Table 3- basic information of the children in two groups**

Variables		comparison group (n=119)	Intervention group (n=119)
Sex	female	60 (50.4%)	52(43.7%)
	male	59(49.6%)	67(56.3)
age	Mid(sd)*	5.11(1.10)	5.09(1.13)
	min	3	3
	max	7	7
Mother's education	Under diploma	36(30.3%)	44(37%)
	diploma	68(57.1%)	67(56.3%)
	Higher diploma	15(12.3%)	8(6.7%)
Mother's experience	No experience	22(18.5%)	22(18.5%)
	Pleasant experience	84(70.4%)	80(67.2%)
	unPleasant experience	13(11.2%)	17(14.3%)
Birth order	first	39 (32.8%)	44(37%)
	second	42(35.3%)	44(37%)
	Third and more	38(31.9%)	31(21.6%)
kindergarten	yes	61(51.3)	62(52.1%)
	no	58(48.7%)	57(47.1%)
mother's prediction of child's cooperation	Very good	34(28.6%)	34(28.6%)
	good	72(60.2%)	68(57.1%)
	bad	13(11.2%)	17(14.3%)
	Very bad	0(0%)	0(0%)
operator	undergraduate	88(73.9%)	88(73.9%)
	Postgraduate	31(26.1%)	31(26.1%)

\*standard deviation

**Table 4- The frequency of children's cooperation in different stages of first dentalvisit**

The child's behavior	group	Very bad		bad		good		Very good	
		count	percentage	count	percentage	count	percentage	count	percentage
Separation of child and mother	Intervention group	71	67%	25	23.6%	10	9.4%	0	0%
	Comparison group	46	46.9%	29	29.6%	21	21.4%	2	2%
entering and sitting	Intervention group	48	45.3%	52	49.1%	5	4.7%	1	0.9%
	Comparison group	49	50%	38	38.8%	9	9.2%	2	2%
Opening the mouth	Intervention group	54	50.9%	44	41.5%	8	7.5%	0	0%
	Comparison group	52	53.1%	38	38.8%	7	7.1%	1	1%
Communication with	Intervention group	52	49.1%	47	31%	7	6.6%	0	0%

dentist	Comparison group	60	61.2%	44	31.6%	7	7.1%	0	0%
Getting the prize	Intervention group	74	69.8%	27	25.5%	5	4.7%	0	0%
	Comparison group	74	75.5%	19	19.4%	5	5.1%	0	0%
Total cooperation	Intervention group	90	84.9%	12	11.3%	4	3.8%	0	0%
	Comparison group	82	83.7%	7	7.1%	7	7.1%	2	2%

Table 5- The frequency of children's cooperation in different stages

The child's behavior	group	Good and very good	Bad and very bad	p-value
Separation of child and mother	Intervention group	90.6%	9.4%	0.006
	Comparison group	76.5%	23.5%	
entering and sitting	Intervention group	94.4%	5.7%	0.1
	Comparison group	88.8%	11.2%	
Opening the mouth	Intervention group	92.5%	7.5%	0.8
	Comparison group	91.8%	8.2%	
Communication with dentist	Intervention group	93.4%	6.6%	0.8
	Comparison group	92.9%	7.1%	
Getting the prize	Intervention group	95.3%	4.7%	0.9
	Comparison group	94.9%	5.1%	
Total cooperation	Intervention group	96.2%	3.8%	0.11
	Comparison group	90.8%	9.2%	

**DISCUSSION**

Because there were a few studies about mother's education and its effect on the child's cooperation and performance during dental treatment, we decided to focus on the first dental visit as a first step in this direction and limit our study to influence of mother's education on children's cooperation in first dental visit. The method that has been chosen in this study to educate mothers was the method of written instruction by preparing educational pamphlet.

The advantage of this method is cost effective and having the ability to repeat and performance. As expected, most dental centers would be able to use this method to increase the level of mother's knowledge and subsequent cooperation of child among dental treatment.

Another study has demonstrated the use of training manuals on issues such as bedwetting, fear of the dark, crying, stuttering, bad food and sleeping lonely [10].

Wright et al. have evaluated sending letters to parents before a dental visit was useful and they have believed children will be better prepared by their mothers. They have reported that almost all parents understand the content of letter and acknowledged dentist's wisdom and welcomed introducing the correct preparation of their child [11].

Soxmanhas recommended providing an educational pamphlet that describes the first dental meeting for parents and ensures them that most of the children's behavior will be controlled by dental professionals as well. Also he has recommended some considerations in pamphlet by the parents before first dental visit could be helpful for parents and children [2].

The results have showed that providing educational pamphlet for mothers is effective on cooperation of 3-7 years old children in the step of separation from mother. In fact, the pamphlet had the greatest impact in the early stages.

It's because since the beginning of presence in the clinic the impact of the therapist and environment on the child is more than the education gave them by their mothers.

In the next study that has done about evaluation the relationship between children's behavior and personality characteristics of mothers. They have concluded that children's cooperation was under the influence of maternal personality in the first session. In the next meeting the influence of maternal personality on children's cooperation was reduced and factors such as the dentist's behavior and his/her assistant and environment had the greatest impact on child's cooperation [12].

In the next study, reading illustrated stories for 6-7 years old children before dental visit was effective on cooperation of them and has increased significantly their cooperation [13].

Graziano and White in two separate studies have reported that complementary methods such as training manuals and videos of role play classes are effective on the educational efficacy. Although, Studies have showed that these complementary techniques developed the awareness of parents but their effect on children's behavior has not been shown to be definitive that this was similar to our results (10, 14). In this study to measure the cooperation of children, the behavior rating index of Frankle scale was used.

This index was used in so many studies [15-18]. Fenlon *et al.* have reported its repeatability was 100% [19].

Thus the possibility of biases had been prevented in answering questionnaire related to cooperation of children in two groups. Although too many therapists and different tactics in grading their children's behavior may affect the results but all the therapists were blind about intervention and comparison group.

One of the reasons that make pamphlets ineffective in this study was a high level of overall cooperation in the comparison group (90.8%). So that the percentage of cooperation was higher than other studies such as Shinohara and Nematolahei studies [12,17]. In assessing the effectiveness of pamphlets on maternal knowledge by taking a pre-test (before pamphlets) and post-test (after pamphlets) finally it was found that the pamphlet was impressive on the mother's knowledge.

Pamphlets effectiveness on mother's knowledge primarily has shown by mother's interest to read the pamphlet. In fact, the key note in this study was the attention and interest of mothers to read the pamphlet.

The obtained results have revealed important thing: Mothers have a potential force to increase their awareness. Not only they are disinterested to the issues surrounding child's dentistry but also they know the importance of this issue and if they access to educational pamphlets, they will be interested to read it.

## CONCLUSION

Providing educational pamphlet for mothers of 3 -7 years old children was not effective on children's cooperation in the first dental visit and it was just effective in the step of separation the child from the mother. Due to the effectiveness of this awareness method, using pamphlet is functional on increasing maternal awareness about the importance of the first dental meeting. This pamphlet is effective on raising parent's awareness about the importance of the child's first dental visit and the way to prepare children for the first meeting.

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## REFERENCES

1. Mc Donald RE, Avery DR, Dean JA. (2011). Dentistry for the child and adolescence. In: Gerald S, Wight S, Stigert J, editors. *nonpharmacologic behavior management*. 9 ed: Elsevier - Health Sciences Division; p. 720.
2. Soxman J. (2006). Parenting the parents of pediatric patients. *Compend Contin Educ Dent*. ;27(11):630-4. Epub 2006/12/01.
3. Pinkham RJ, Nowak AJ, McTigue JD, Henry W, Fields JR, Casamassimo SP. (2005). Pediatric dentistry - infancy through adolescence. In: Wilson S, editor. *nonpharmacologic behavior management*. 4 ed: elsevier saunders.
4. Bankole OO, Denloye AA. (2004). The effect of mothers past dental experience on the behavior of some nigerian children during dental treatment. *J Biomed Res*. 7:113-8.
5. Mathewson RJ, Primosch RE, Robertson D. (1987). *Fundamentals of Paediatric Dentistry*. Quintessence Publishing Co Inc. *Pediatr dent*. 137-52.
6. Dentistry AAoP. (2011). Guideline on Behavior Guidance for the Pediatric Dental Patient. *pediatr dent*;43:28-32.
7. Muris P, Meesters C, Merckelbach H, Hulsbeck P. Worry in children is related to perceived parental rearing and attachment. *Behav Res Ther*. 2000 May;38(5):487-97
8. Chadwick M. *Child Taming: How to Manage Children in Dental Practice*. preparing parent for first dental visit 2003. p. 138.
9. Răducanu AM, Feraru V, Herteliu C, Anghelescu R. Assessment of the prevalence of dental fear and its causes among children and adolescents attending a department of paediatric dentistry in Bucharest. *OHDMBSC*. 2009;8(1):42-9.
10. Wright L, Schaefer AB, Solomons G. (1979). Indirect treatment of children through principle oriented parent consultation. *J Consult Clin Psychol*. 44:148-56.
11. Wright GZ, Alpern GD, Leake JL. (1973). The modifiability of maternal anxiety as it relates to children's cooperative dental behavior. *ASDC J Dent Child*.40(4):265-71.
12. Nematollahy N, Tabatabaee SM. (2002). Evaluation of relationship between children behavior and characteristic and personality of their mother. *J Mash Search Dent*.28(1,2):111-18.
13. Aminabadi NA, Vafaei A, Erfanparast L, Oskouei SG, Jamali Z. (2011). Impact of pictorial story on pain perception, situational anxiety and behavior in children: a cognitive-behavioral schema. *J Clin Pediatr Dent*. 36(2):127-32. Epub 2011/01/01.

14. Graziano AM, Diament DM. (1992). Parent behavioral training. An examination of the paradigm. *J Clin Child Psycho.* 16:3-38.
15. Machen JB, Johnson R. (1974). Desensitization, model learning, and the dental behavior of children. *J Dent Res.* 53(1):83-7.
16. Afshar H, Baradaran Nakhjavani Y, Mahmoudi-Gharaei J, Paryab M, Zadhooosh S.(2011). The Effect of Parental Presence on the 5 year-Old Children's Anxiety and Cooperative Behavior in the First and Second Dental Visit. *Iran J Pediatr.* 21(2):193-200.
17. Shinohara S, Nomura Y, Shingyouchi K, Takase A, Ide M, Moriyasu K, et al.(2005). Structural relationship of child behavior and its evaluation during dental treatment. *J Oral Sci.* 47(2):91-6.
18. Tabatabaee SM. (2002). Evaluation of easy and difficult behavior and some related factors in one hundred 3-6 year old children visited in Mashhad dental school. *J Mash Search Dent.* ;28(3):206-10.
19. Fenlon WL, Dabbs AR, Curzon ME.(1993). Parental presence during treatment of the child patient: a study with British parents. *Br Dent J.* 9;174(1):23-8

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