

Behavior Assessment Amid Children Aged 0 to 3 Years in Dental Institution

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ABSTRACT

The study was conducted to evaluate the behavior of children in age group of 0 to 3 years in dental institution. Sample sizes of 432 were selected randomly for the study, between age group of 0 to 3 years. They were divided into six groups according to their age: Group I—0 to 6 months; Group II—7 to 12 months; Group III—13 to 18 months; Group IV—19 to 24 months; Group V—25 to 30 months; Group VI—31 to 36 months. The behavior of the child was observed while his/her entrance in the dental department and during the first four clinical appointments with a clinical examination and oral hygiene therapy. The child was classified as collaborative behavior (CB) and noncollaborative behavior (NCB). Statistical analysis was performed using Pearson's Chi-square test ($p < 0.005$). Result showed that babies from 0 to 6 months showed a favorable behavior; babies from 7 to 30 months showed unfavorable behavior; and babies from 31 to 36 months showed no statistically significant difference between the percentage of collaborative and noncollaborative behavior.

Keywords: Infant oral health, Behavior management, Child behavior, Dental department, Child psychology.

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INTRODUCTION

Infant oral health is based upon preventive education and dental care which must be built to augment the opportunity for lifetime free of preventable oral diseases.¹ In the matter of children's health, parents are decision-makers. Hence, they play an important role in achieving the best oral health outcomes for their young children.

Considering parent's important role in the well-being of young children, it is essential to explore their knowledge, attitude, and beliefs as it affects the dental care children receive at home and their access to professional dental services. Since 1986, the American Academy of Pediatric Dentistry (AAPD) has recommended that the first dental visit of child should occur within 6 months of the eruption of the first tooth and no later than 12 months of age.² In recent years, the number of professionals providing dental care to infants has greatly increased. But the major hurdle in providing treatment to children of 0 to 36 months age group is their infantile behavior and immature communication ability.

According to Walter, newborn infants are docile and easy to manage, requiring the presence of their mother for more prolonged contacts.³ The variables affecting behavior are separation from the mother, strange environment and persons and interference with the body.⁴ Melo and Walter stated that sudden changes in behavior of children occurred mainly due to a change of dentist and to emergency care situations of pain.⁵ Children's behavior has been classified by various authors. For this study we have used Walter et al behavior rating scale that is appropriate to the child's age taken for the study and is based on the observation of the child's behavioral response to the stimuli used.³

The knowledge psychological development of children is fundamental basis for the better perception of behavioral aspects related to dental care at this age. Current literature does not provide ample of data concerning the behavior of children in this age group. The child's response to various dental stimuli permits the establishment of distinct behavioral patterns. Klein⁶ has stated that the way the child assimilates its experience with the dentist is decisive for the formation of attitudes and expectations toward dental treatment, although the emotional impact of dental treatment started during early childhood is not exactly known.^{7,8}

As its been emphasized today to start dental care during the first year of life, hence the objective of the present study was to present the behavior of children aged 0 to 36 months during four sessions of dental care.

METHODOLOGY

The sample consisted of 991 children aged between 0 to 36 months, which came to the Department of Pedodontics, Institute of Dental Sciences, Bareilly, India between Jan 2009 and July 2010. The babies were divided into six groups according to age group: Group I—0 to 6 months; Group II—7 to 12 months; Group III—13 to 18 months; Group IV—19 to 24 months; Group V—25 to 30 months; Group VI—31 to 36 months. According to the following criteria, children who were enrolled in the program were healthy and free from physical or mental handicaps. Information were collected when the subject faced the following stimuli:

- a. Entering in the dental department
- b. Clinical oral examination
- c. While performing oral hygiene procedure

Children were recalled for four sessions during which above-mentioned procedures were performed.⁷ The sessions were separated from 1 week intervals.⁷

Infant dental care was provided by the dentists, who followed a protocol described in a published paper,⁹ was qualified to evaluate the psychological development of subjects at particular age, was able to record the behavior in each session and mention them in patients file. The behavior rating scale used for this study was Walter et al behavior rating scale.³ This classification has been used at baby clinic since its implantation at 1994. This classification was used in previous studies for children of this age group.¹⁰ The infants were classified as follows:

- *Collaborator*: An infant, who does not cry when in the arms of the operator, does not try to prevent the execution of the procedures, reacts favorably, and acts normally when in the dental chair without demonstrating fear of what is new.
- *Partially collaborator*: An infant, who does not cry when in the arms of the operator or in the dental chair, does not prevent the procedures but cries during their execution.
- *Noncollaborator*: An Infant, who cries when in the arms of the operator or lying in the dental chair, keeps his lips closed during the oral hygiene procedure, and tries to prevent the dental procedures with his hands.

Data obtained were analyzed by Pearson's Chi-square test and by the Chi-square.

Partitioning tests for a 2x N table when necessary to compare the behavior of the children with respect to the age ranges analyzed. The level of significance was set at 5% in all analysis.

RESULTS

The results are presented in Table 1. The table shows the number of children and their behavior as collaborator and noncollaborator from session 1st to 4th.

In Table 2 the Chi-square partitioning test showed that the percentage of negative behavior was significantly higher in the 7 to 30 months old (64%) range than in the 0 to 6 months (23.3%) and 31 to 36 months (51.4%) age range.

In Table 3 Chi-square positioning test showed that percentage of noncollaborative behavior significantly higher in the age range of 13 to 24 months (approx 60%). 7 to 12 months of infants showed 54.5% of noncollaborative behavior which was not statistically significant. 0 to 6 months showed 15.2% of noncollaborative behavior.

Table 4 shows that in the 2nd session the percentage of negative behaviors were significantly higher in the 19 to 24 months range (76.4%). In the 0 to 6 months the range was 13%.

In Table 5 the Chi-square positioning test showed that the percentage of negative behavior was significantly higher in the 25 to 30 months range (70.6%) than in the 0 to 6 months range (22.8%). For 7 to 12 months the range was 54.3% which was not statistically significant.

In the 4th session, as seen in Table 6 the Chi-square partitioning test showed that at the age range of 13 to 18 months noncollaborative behavior was significantly higher (72.7%). By the end of session the noncollaborative behavior of 0 to 6 months old have also increased toward noncollaborative, but it was not statistically significant.

DISCUSSION

Pediatric dentist should not drop the occasion to explain to parents the significance and practicability of caring for

Table 1: Children ages 0 to 36 months distributed according to session and behavior

Age (months)	1st session		2nd session		3rd session		4th session		Total	
	N col	Col	N col	Col	N col	Col	N col	Col	N col	Col
0-6	14	78	12	80	21	71	39	53	86	282
7-12	121	101	147	91	132	111	131	107	531	410
13-18	124	83	153	74	133	58	139	52	549	267
19-24	128	80	159	49	141	67	129	79	557	275
25-30	128	91	156	73	149	62	125	68	558	294
31-36	109	105	114	109	105	97	99	92	427	403

Table 2: Children ages 0 to 36 months distributed according to age range, session and behavior considering the total of all sessions from the 1st and 4th

Age (months)	Noncollaborator	Collaborator	Total	Percentage of noncollaborator
0-6	86	282	368	23.3%
7-30	2195	1246	3441	64%
31-36	427	403	830	51.4 %
Total	2304	1648	3952	

Table 3: Children ages 0 to 36 months distributed according to age range, session and behavior considering the 1st session

Age (months)	Noncollaborator	Collaborator	Total	Percentage of noncollaborator
0-6	14	78	92	15.2%
7-12	121	101	222	54.5%
13-18	124	83	207	60%
19-24	128	80	208	61.5%
25-30	128	91	219	58.4%
31-36	109	105	214	50.9%

Table 4: Children ages 0 to 36 months distributed according to age range, session and behavior considering the 2nd session

Age (months)	Noncollaborator	Collaborator	Total	Percentage of noncollaborator
0-6	12	80	92	13.0%
7-12	147	91	238	61.7%
13-18	153	74	227	67.4%
19-24	159	49	208	76.4%
25-30	156	73	229	68.1%
31-36	114	109	223	51.1%

Table 5: Children ages 0 to 36 months distributed according to age range, session and behavior considering the 3rd session

Age (months)	Noncollaborator	Collaborator	Total	Percentage of noncollaborator
0-6	21	71	92	22.8%
7-12	132	111	243	54.3%
13-18	133	58	191	69.6%
19-24	141	67	208	67.7%
25-30	149	62	211	70.6%
31-36	105	97	202	51.9%

Table 6: Children ages 0 to 36 months distributed according to age range, session and behavior considering the 4th session

Age (months)	Noncollaborator	Collaborator	Total	Percentage of noncollaborator
0-6	39	53	92	42.3%
7-12	131	107	238	55%
13-18	139	52	191	72.7%
19-24	129	79	208	62%
25-30	125	68	193	64.7%
31-36	99	92	191	51.8%

young children, how it promotes a lower incidence of caries, and it decreases problems in the approval of future dental management. In past few years, infant oral health has gained importance in pediatric dentistry; this early care is acceptable not only in terms of the maintenance of oral health, but also because it permits the child to get used to routine dental procedures.⁷ Infant often cannot be reached linguistically, there is not much written about this age group behavior. So, the findings of this work must be empathized.

In the present study, the subjects were quite young from 0 to 36 months hence we believe that the classification which was used for our study was appropriate as it was simple and it also facilitated patient categorization by us.

Considering the four visits as a whole as shown in Table 2, 0 to 6-month old children were found to have more collaborative behavior, older children were found to be

noncollaborative in nature. These findings are in synchronous with previously studies done in the same age group.^{7,10}

As the results of each session and each age range were considered separately, collaborative behavior predominated only in the 1st age range (0 to 6 months) and during the first three sessions, whereas noncollaborative behavior prevailed during the 4th session. For the remaining age ranges, there was a clear predominance of uncooperative behavior during all the four sessions. These results are in tandem with previous work by different authors.^{7,10}

In the last period analyzed (31 to 36 months), there was no significant difference between the manifestations of collaborative and noncollaborative behavior.

These findings show that the age of the child is the prime criteria in determining its behavior in the dental clinic regardless of the stimulus offered.

Percinoto and Cunha¹¹ and Cunha et al⁷ in their study have observed that the process of maturation of behavioral reactions over the first 3 years of life in infants participating in a program of early dental caries prevention can be divided into three phases. These are as follows:

1st phase: This phase corresponds to the first year of life; the behavior of the patient is characterized by collaboration with the dental procedures. During this phase, the infant strongly manifests one of the global responses to the complex of environmental stimuli offered, a behavior called affectionate reaction.

2nd phase: It consists of the period between the first and the end of the second year of life of the infant, maturation of the child's motor skills is observed. Therefore, episodes of crying, mouth closing, tongue action and introduction of other body parts that have acquired the notion of movement, such as the arms may now try to prevent the action of the profession.

3rd phase: This phase corresponds to the 3rd year of the infant life that is characterized by periodical visits, the responses become more favorable and the children start to cooperate with the treatment.

The results obtained in this study shows that child behavior in the selected age range depends on their psychomotor development. The reactions of the children went from less intricate to more complex, at first being of a reflex nature and then progressing to the expression of voluntary acts permitted by physical maturation,¹²⁻¹⁴ as the children becomes older they resist the dental treatment by crying, closing the mouth, schuffling with hands and legs.

According to Ribble,¹⁴ these actions appeared to represent energy shifting to a new perception, permitting new actions in a being.

The child behavior from 0 to 36 months can also be explained by the psychoanalytical theory of Freud who stated that the psychic nature of the baby was orally centered and when reflexes, such as sucking, were present in a very intense manner; properly oriented manipulation of the oral cavity may be a source of pleasure to the baby. The study of human behavior and the unevenness of its manifestations are complex subject, especially in young children where communication is not fully developed. This study was done only in four sessions; to understand the behavior of the child in dental clinic longitudinal study is needed to be done.

CONCLUSION

Considering the period and methodology used, the following conclusions were drawn:

1. Children 0 to 6 months of age showed a collaborative behavior which later turned into noncollaborative behavior.
2. Children 7 to 30 months of age showed an uncooperative behavior throughout the four sessions.
3. Children 31 to 36 months showed no statistically significant differences in the behavior between the four sessions conducted.

RECOMMENDATION

Our study was of short duration. In future longitudinal studies should be conducted to know the behavior of children within this age range more precisely. In our study we have used Walter's classification, in future study can be conducted taking other classification in consideration and using different stimulus.

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