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Evaluation of words in child-paediatric dentist communication

ABSTRACT

Aim *Aim of the present study is to demonstrate which words are widely used by children and a paediatric dentist during different dental procedures in conjunction with behaviour shaping in paediatric dentistry.*

Materials and methods *Twenty children aged between 3.5 and 10.5 (10 F, 10 M) visiting the clinic of Yeditepe University were enrolled for the study. An audio recorder was hidden in the operatory room, the paediatric dentist was blind. The procedure was randomised as for each child oly one appoint-ment was recorded (one patient-one appointment-one procedure). Age, gender, appointment type, details of procedure performed were recorded. At the end of every session, records were investigated regarding verbal communication.*

Results *The paediatric dentist used a total of 5,005 words during the trial with minimum of 13 and max of 518 words in a session (mean 211.8±153.1). There were no significant differences in the words used by the child and the practitioner regarding gender, session, and duration of being acquainted with ($p>0.05$). Regarding age groups, preschoolers (3.5-6 yrs old) significantly used more words than the schoolers (7-10.5 yrs old) ($p<0.05$).*

Conclusion *Paediatric dentists should be careful and selective in communication with children as well as using an age-appropriate language.*

Keywords *Evaluation of words; Paediatric dentisty.*

Introduction

Growing to be adults, human beings experience the opportunity to be a child. Forgetting memories of the childhood experience may give us the impression of 'children's different responses to daily life sometimes seem quite odd'. If the present situation is adapted into a paediatric dentists' chair, the consequences of children's behaviour should be experienced [Çaglar et al., 2012].

Children's behaviour may change due to age, competence, maturity, personality, temperament, emotions, experience, oral health, family background, culture etc. At this point behaviour shaping of children implies training on how to cope with dental instruments and procedures [Klingberg et al., 2009]. Behaviour shaping comprises non-pharmacological behaviour management techniques (BMTs), such as tell-show-do, voice control, non verbal communication, positive reinforcement, parental presence and absence, distraction, and perceived control [American Academy on Pediatric Dentistry, 2009; Hosey and Chadwick, 2003; Kuscu, 2006; Kuscu et al., 2013]. Social attitudes, parental expectations, developing children's rights and technology in conjunction with leading research performed on BMTs urge re-shaping of the strategies for the cooperative child [Çaglar et al., 2012]. At this point it should be noted that most of BMTs are guided with a verbal communication, while non-verbal communication does not possess 'word' illumination. The development of verbal repertoires greatly alters human operant performance, and this accounts for many of the differences found between animal and human learning [Lowe et al., 1983]. Words emphasise the importance of 'what is told' by the practioner and 'what is understood' by the child. Broberg and Klingberg [2009] recently introduced the categorical nature of words after the age of 3, where children learn to organise automatically the linguistic input they receive from other people like parents, teachers ,books, etc. It should be noted that practitioners are also targeted by the small children in this manner. To our knowledge, the possible effect of words used in behaviour shaping of paediatric dental patients has not been reported. Therefore the aim of the present study is to demonstrate which words are widely used by the children and a paediatric dentist during different dental procedures in conjunction with behaviour shaping in paediatric dentistry.

Materials and methods

The study protocol was in accordance with the Helsinki Declaration of Human Rights. A written consent was obtained from all parents after explaining the objectives of the study.

The study venue was the Paediatric Dentistry Department of Yeditepe University School of Dentistry, İstanbul where a paediatric dentist (OOK) was informed

about the study protocol a year priorly (blind to trial: when, where, how; naturalisation).

A hidden audio recorder (Phillips LFH0612 Voice Tracer®, Phillips, Korea) was set in the operatory room, whereas the paediatric dentist was blind to this setting.

During a 3-month period (January-April 2011) 20 children (10 F, 10 M) visiting the clinic to be treated by OOK were invited into the study by co-authors. The procedure was randomised as every child's appointment was recorded once (one patient-one appointment-one procedure). Age, gender, appointment type (regular appointment [1st, 2nd, etc.], recall), details of procedure (operative techniques, application of local analgesia, etc) used were recorded by co-authors. Dental records of children were analysed retro- and prospectively.

Parents were asked to remain silent regarding the study protocol and not mention it both to the child and the practioner. At the end of every session, records were investigated regarding verbal communication. Words told by the practioner and the child were further analysed by co-authors.

Statistical analysis

Regarding statistical analysis, the data were evaluated by Mann-Whitney-U test using NCSS 2007® (Kaysville, UT, USA) package programme. A p-value <0.05 was considered as statistically significant.

Results

The children who participated in the study group were aged between 3.5 and 10.5 with a mean age of 7.3±2.7. Children experienced dental treatment with their paediatric dentist from one to 38 months with a mean treatment period of 11.9±11.8 months. The observational session varied from 2nd to 14th sessions (mean 5.9±4.2).

The paediatric dentist used a total of 5005 words during the trial with a minimum of 13 and a maximum of 518 words per session (mean 211.8±153,1). There were a total of 626 different words used by the practioner where children used a total of 187 words with 101 different ones. Children had used a min of 3 to max of 54 words with a mean of 9.3±14.4 words per session. The ten most used words spoken by the practioner and the child are listed in Table 1. Types of treatments scheduled are listed in Table 2 prospectively. There were no significant differences in the number of words used by the child and the practitioner regarding gender of the child, session order, and duration of being acquainted with (p>0.05). Regarding age groups, preschoolers (3.5-6 yrs) significantly used more words than the schoolers (7-10.5 yrs) (p<0.05) (Table 3). Although the practioner used more words for communicating with the preschoolers, no statistical differences were noted.

Discussion and conclusion

Human beings learn to formulate rules based upon verbal descriptions of their environment, then responding may no longer be a direct function of reinforcement but may also be governed by rules of the subjects' own devising [Skinner, 1966]. Animal behaviour, on the other hand, is directly governed by environmental contingencies and is free of sources of control arising from the development of language. Recently it was stated that the behaviour of young children should be directly contingency-controlled and

Practioner	n	Child	n
Open	201	AAA	35
Let's see	180	Iiihh	12
tooth	129	hmmm	11
To be	115	want	6
stop	92	very	4
this	88	this	3
I	82	yes	3
that	77	mom	3
Child's name'	73	hurts	3
my one and only	70	why	3

TABLE 1 Ten most used words by the practioner and the child patient.

Treatment	N of sessions
Pulp capping	2
Composite filling	6
Primary root canal filling	2
Topical fluoride application	4
Prophylaxis	2
Primary tooth extraction	2
Glass ionomer filling	3
Space maintainer	3
Compomer filling	1

TABLE 2 Types of treatments scheduled.

	Preschooler (<7 yrs old) n:10	Schoolers (>7 yrs old) n:10	MW	p
Child	14.2±16,8	2±4.5	17.5	0.015*
Practioner	244.7±172.8	162.5±109.9	36	0.355
Total	259±177.1	164.5±109.3	34	0.280
* p< 0.05				

TABLE 3 Words evaluation regarding age groups.

consequently should show schedule effects that are characteristic of animal behavior [Skinner, 1966]. In the literature, it was demonstrated that children 5 years and older produced verbal descriptions of the contingencies that were very similar to those of adults. When children are instructed to describe how they will behave or how they have behaved, with reinforcers being presented only when their verbal reports correspond to their nonverbal behaviour, the incidence of these reports and the behaviour to which they refer greatly increases Bentall et al., 1985; Bentall et al., 1987].

Communication, as defined by Wright [2000] is a complex multisensory complex which includes a transmitter, a medium, and a receiver. The author further described the dentist as the transmitter, the spoken word as the medium and the child as the receiver. It should also be emphasised that communication between the practioner and the child is bipolar. Broberg and Klingberg [2009] stated that "by age of 5 or 6, total vocabulary has risen to approximately 15,000 words with an increase of 10 words per day". There is still controversy within the range as Blinkhorn [2001] stated the performance of this age about to be 2,000 words. In the present study, the practioner used over 600 different words for to communicate with the child patient.

Regarding the most used words, it was noticeable that the practioner used especially two touching words, 'child's name' (mean 3.6±4.5 words per child) and 'my one and only' (mean 3.5±3.9 words per child). Recently Blinkhorn [2001] stated the importance of greeting the child by name instead of using generalised terms for them to feel special. Another point is that the word 'I' was used twice as aften as "you" (n:41) which might be noticeble. Generally a "you" message underlines the feeling that the child is blamed. In the present study, the most used words used by the children were "AAA" and "hmmm". Actually these were two communication tools of vocal signaling thought by the practioner in the first session. Kuscu et al. [2011] recently stated that "the clinician should periodically remind the child about her/his freedom: If you want me to stop for any reason you can say 'AAA', or 'HMM', ok?'' It is obvious that the children got the message the practioner had tried to empose.

The figurative idea of this study belongs to all age, healthy and special care children without mental retardation and hearing loss. A special note goes to refugee children, blind children, autistic children where word choice becomes more important than ever.

In conclusion, paediatric dentists should be careful and selective regarding the language they and children use.

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