



PARENTAL EXPECTATION FOR THEIR CHILD BEHAVIOR IN A GROUP OF PRESCHOOL CHILDREN DURING THEIR FIRST DENTAL EXAMINATION: A cross-sectional study

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Abstract

objective: The aim of this study is to assess the parental expectation for their child behavior in a group of preschool children during their first dental examination.

Materials and methods: This cross-sectional study used the Strength and difficulty questionnaire (SDQ). It was provided to parents/caregivers of children attending the pediatric dental clinic before the diagnosis. The behavior of the children was assessed using Frankl Scale. It was conducted on 170 children and their parents.

Results: The mean age of the patients was (4.25±0.84) years. There was an excellent agreement between both observers (Weighted kappa=0.918) regarding the child behavior using Frankl scale. There was a statistically significant association between SDQ and Frankl scale regarding some questions. Association between SDQ and dmf was not statistically significant. For “Peer problems scale”, “Prosocial scale” and overall score, there was a significant weak correlation between SDQ and child behavior. There was no significant correlation between SDQ and dmf. For “Conduct problems Scale”, there was a significant weak correlation between SDQ and age ($p=0.035$). For “Conduct problems Scale”, males had a significantly higher SDQ than females ($p=0.006$).

Conclusions: There is a great association between SDQ and several behaviors of the studied children.

Keywords: child behavior, first dental visit, SDQ questionnaire, prediction.



goals. It might be overwhelming to try to control a difficult child's attitude while also dealing with unpleasant parental behavior⁽⁴⁾.

Early dental visits are crucial for young children because they enable dental practitioners to identify early carious lesions, assess dental development, offer dietary counselling and anticipatory assistance, and encourage parents to adopt preventative practices⁽⁵⁾. Furthermore, early exposure to dental surroundings helps children adapt and grow accustomed to them, possibly increasing the likelihood for better conduct and tolerance with subsequent dental treatment⁽⁶⁾.

Strength and Difficulty Questionnaire (SDQ) is a brief mental health-screening questionnaire grouped into five subscales, generating scores for conduct, hyperactivity, emotional stability, peer problems, and prosocial behavior. Each item should be scored on a 3-point scale (0, 1, 2) that represent normal, borderline, and abnormal. Higher scores on the prosocial behavior subscale reflect strengths, whereas higher scores on the other four subscales reflect difficulties⁽⁵⁾.

The SDQ is essential for determining psychopathological symptoms in children and adolescents due to three criteria. Firstly, despite the high rates of behavioral and emotional problems, only a small percentage of children and adolescents receive mental health

Introduction

Behavior management is of main concern in pediatric dentistry for a long time and is considered one of the cornerstones in the dental clinic for successful treatment. Dental anxiety and fear are critical components of child management in dental care, as they are usually the biggest barrier to the successful completion of dental treatment⁽¹⁾.

For measuring a child's behavior during dental visits, several rating measures were established, one of them is Frankl scale which is a widely used and validated behavior scoring tool. It often results in a high inter-examiner agreement, often over 90%. The Frankl's behavior rating scale is divided into four categories from 1 to 4. Starting from 1 (definitely negative), 2 (negative), 3 (positive), and 4 (definitely positive)⁽²⁾. An overall rating could be given based on the child's overall behavior during that visit⁽³⁾.

The behavior of young children can be predicted by many factors, such as child's previous history in the dental clinic and parent-related factors (socio-economic, education, parenting style, and stranger anxiety). Since parents have the greatest influence on their children's development, they may be able to predict their behavior⁽¹⁾. Parents' expectations may be influenced by their dental fear, therefore it's important to pay attention to the parents and their situations to achieve the treatment



results of Kumar and colleagues (7). in which the prevalence of positive dental behavior in children as a parent's report was (68.4%)- by adopting a confidence interval of (95%), a margin of error of (7%) with a finite population correction; The predicted sample size (n) was a total of (170) cases. Sample size calculation was performed using Epi info for windows version 7.2.

Type of sampling:

It was a convenient consecutive sample.

Ethical approval and registration:

Ethical approval was obtained from Research Ethics Committee, Faculty of Dentistry, Cairo University with approval number 12 – 6 – 20.

This study was registered on clinical trial.gov with ID number: NCT04307810

Participants:

Children and their parents who attended the diagnostic clinic, Pediatric Dentistry and Dental Public Health Department, Faculty of Dentistry, Cairo University, Egypt, were examined for their chief complaints. All children fulfilling the eligibility criteria were included. There were no follow up visits in this study.

Eligibility criteria:

The inclusion criteria involved children with primary teeth in their first dental visit and their parents approved to fill the SDQ. Also, children presenting with dental emergency or have

care. Secondly, such measurements can be used by doctors as a part of clinical assessment to obtain a general understanding of the type and severity of the psychological issues. Finally, doctors who want to assess the effects of dental treatment can benefit from standardized surveys⁽⁷⁾.

The dentist can create a behavior guidance plan to carry out the required oral health care by considering the child's growth, experiences, and present emotional condition. Evaluation of the child's behavior helps in the direction of an individualized behavior guidance strategy that encourages dental care and allows for systematic tracking of behaviors to schedule future appointments⁽⁶⁾.

The aim of this study was to assess firstly; parental expectation for their child behavior in a group of preschool children during their first dental examination. Secondly, the child behavior using Frankl Scale and their relation to gender and age.

Material and methods

Study design:

A cross-sectional study

Sample size determination:

A power analysis was designed to have adequate power to apply a 2-sided statistical test of the research question regarding parental expectation for their child behavior in a group of preschool children during their first dental examination. According to the



acceptance (rating 3 = positive; or 4 = definitely positive) whereas negative behavior was defined as negative acceptance (rating 1 = definitely negative; or 2 = negative) according to Kumar et al.⁽⁷⁾.

The child's behavior was observed, videotaped, and then assessed by another examiner. Inter agreement was obtained for the Frankl scale between two examiners. Scoring of the Strength and Difficulty Questionnaire scales was performed⁽⁹⁾. The SDQ was grouped into 5 subscales (conduct, hyperactivity, emotional, peer problems, and prosocial) each one of them is represented by specific questions in the questionnaire, for each scale, the score ranges from 0-10. For the total difficulties score measuring, all scales were summed together except the prosocial, the score ranges from 0-40 for each. Externalizing and internalizing problems were calculated separately, the score ranges from 0-20 for each, the sum of the conduct and hyperactivity for externalizing problem and the sum of emotional and peer for internalizing problem⁽⁹⁾.

Statistical analysis:

Categorical data were presented as frequencies (n) and percentages (%) and were analyzed using the chi-square test. Quantitative data were presented as mean and standard deviation values. Ordinal data were compared using the Kruskal-Wallis test followed by Dunn's post hoc test.

psychological problems or chronic illness were excluded from this study⁽⁷⁾.

Upon arrival at the clinic, each parent or caregiver were asked to fill a questionnaire which includes multiple behavior and actions exhibited by the parents and according to their answers positive behavior of the child were determined according to Kumar et al.⁽⁷⁾.

Confidentiality:

The questionnaire strictly maintained the anonymity of the participants with no personal identifiers, and it was emphasized that there was no pressure to reply and that filling out the questionnaire was entirely voluntary.

Procedure and clinical examination:

According to anxiety-provoking stimuli by Ramos-Jorge et al.⁽¹⁾, the initial assessment was evaluated in the following sequence: 1st step- enter the clinic. 2nd step - mirror in the mouth. 3rd step- Probe the surface of the tooth and a fingernail. 4th step - air blower on hand. 5th step- clinical examination. The demands are gradually increased in ascending order of relative magnitude as anxiety provoking stimuli. Direct ratings of behavior were performed by Frankl behavior rating scale according to Riba et al.⁽⁸⁾. Finally, the 6th step - evaluation of the acceptance degree according to the Frankl behavior rating scale was coded 1, 2, 3, or 4. Positive behavior was defined as positive



(58.2%) were females. The mean age of children was (4.25±0.84) with median 4.5 (range max and min). The mean value of the dmf score was (7.36±2.02).

The Inter-observer reliability:

There was an excellent agreement between both observers regarding **Frankl's scale** (Weighted kappa=0.918). Also, most of the children were definitely positive as shown in Fig. (1).

Inter-observer reliability was analyzed using the weighted kappa coefficient. Spearman's rank order correlation coefficient was used to study the correlation between ordinal variables. The significance level was set at $p \leq 0.05$. Statistical analysis was performed with R statistical analysis software version 4.1.1 for Windows1.

Results

The study involved 170 children and parents, 71(41.8%) were males and 99

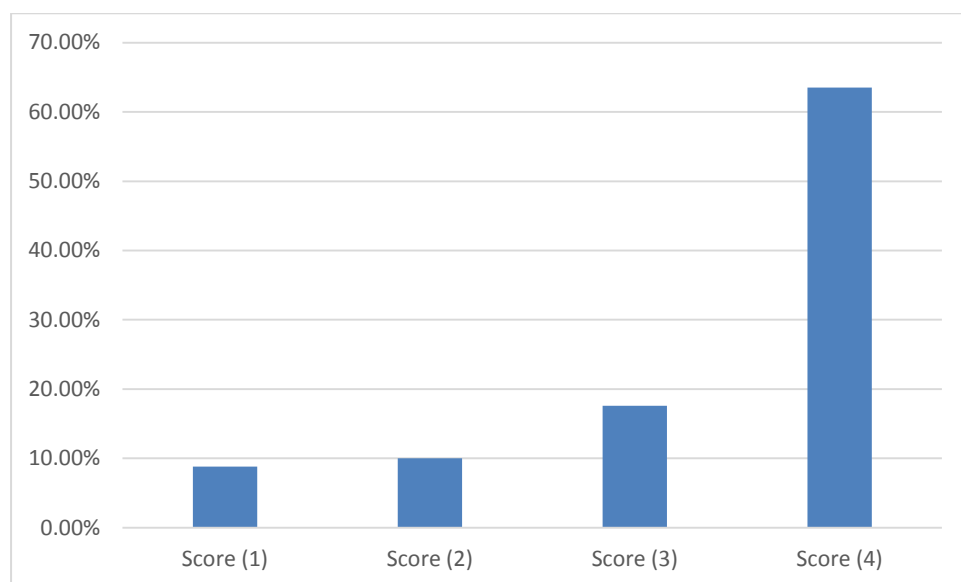


Fig. (1): A bar chart showing the child's behavior score

For "Peer problems scale", "Prosocial scale" and an overall score, there is a statistically significant weak correlation between SDQ and child behavior ($p=0.032$), ($p=0.007$), and ($p=0.009$) respectively as shown in table (2).

Table (1): Correlation between SDQ and child behavior rating scores

Domain	r_s	p -value
Peer problems scale	0.074	0.032*
Conduct problems Scale	0.057	0.199ns
Hyperactivity scale	0.008	0.891ns
Prosocial scale	0.120	0.007*

Emotional problems scale	-0.035	0.362ns
Total	0.044	0.009*

For “Conduct problems Scale”, there is a statistically significant weak correlation between SDQ and age ($p=0.035$) as shown in table (3).

Table (2): Correlation between SDQ and age of children

Domain	r_s	p -value
Peer problems scale	0.021	0.545ns
Conduct problems Scale	-0.093	0.035*
Hyperactivity scale	0.037	0.501ns
Prosocial scale	0.002	0.963ns
Emotional problems scale	-0.034	0.375ns
Total	0.013	0.453ns

Also, for “Conduct problems Scale”, males had a statistically significantly higher SDQ than females ($p=0.006$). For other domains, the difference is not statistically significant ($p>0.05$) as shown in table (4).

Table (3): Association between SDQ and gender of children

Domain	SDQ (Mean±SD)		p -value
	Male	Female	
Peer problems scale	2.15±0.92	2.21±0.91	0.343ns
Conduct problems Scale	2.00±0.88	1.78±0.86	0.006*
Hyperactivity scale	2.24±0.87	2.25±0.85	0.984ns
Prosocial scale	2.42±0.75	2.53±0.69	0.101ns
Emotional problems scale	2.05±0.86	2.15±0.83	0.156ns
Total	2.01±0.89	2.03±0.90	0.627ns

⁽⁸⁾. There are several studies assessing the parent’s prediction of their child behavior during non-invasive first dental visit^(7,10,11), but only few of them used Strength and Difficulty Questionnaire.

In this study, all the parents who filled out the SDQ were mothers. Similarly, Cademartori and colleagues⁽⁹⁾. But

DISCUSSION:

This is a cross-sectional study to assess the child behavior in a group of preschool children using the Frankl scale based on their parent’s perception during their first dental visit using the strength and difficulty questionnaire (SDQ). It was answered by their parents before examination



gender, Females showed more emotional problems than males but males showed more conduct problems⁽¹⁷⁾.

Additionally, they found that males had externalizing problems more frequently than females, which helped to explain the previous finding. Poor quality of the educational background, lack of discipline, and the lack of parental supervision can all be used to explain the high prevalence of conduct issues in community samples. The high prevalence of emotional issues, however, is primarily a result of parents, such as an unstable home environment, rejection by one or both parents, intellectual expectations by the parents that are higher than the child can obtain, or a physical defect that causes the child to feel different than other children⁽¹⁷⁾.

A study in Greek also explained this difference between male and female in SDQ score is due to certain behaviors are displayed more frequently or are more outspoken among males than females, and vice versa. Also, aggressive behaviors, including antisocial behavior and fighting in the school setting, were found to be more common in males, which were correlated with substance use, abuse, and inadequate parenting. Meanwhile, girls showed more early-onset childhood depression symptoms than boys, including shyness, withdrawal, hypersensitivity, and physical complaints⁽¹⁸⁾.

disagree with Pandiyan & Hedge⁽¹²⁾ who didn't specify the parent.

Regarding the correlation between the SDQ questionnaire and child behavior in this study, there was a weak significant correlation for the children with Peer problems and Prosocial problem scale. Similarly, other studies reported that children with peer and emotional problems tend to show more negative behavior in the dental clinic^(9,13).

Our study results showed a weak association between SDQ and age in particular children with a conduct problem. In agreement with, Humphris & Zhou who had a small age range⁽¹⁴⁾. The result disagrees with other studies who had a wider age range they found no significant association between the SDQ and age^(9,13,15). Furthermore, males had significantly higher scores on the subscales: conduct problem, hyperactivity, and peer problem. In parallel, one study result showed a significant association of male gender with the conduct problem subscale⁽¹³⁾.

A cross sectional study was conducted in Egypt for children aged between 4 and 7 years attending the outpatient Pediatric Dentistry clinic for the first time. The Parents in this study were asked to answer the SDQ, before a simple restorative treatment under local anaesthesia. They reported that emotional and conduct problems were found to have the highest prevalence among participants. According to



The authors declare no competing interests. A study was drawn from a large panel

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of a Dutch research agency for children aged 2–18 years to identify the risk of psychological problem in children. They reported that not all scores could be presented for children ages 2 to 5 due to lack of internal consistency, including conduct problems, peer problems, and emotional problems. This may be because some items do not apply well to the developmental period of young children or cannot be regarded as problematic behavior in toddlers⁽²⁰⁾.

CONCLUSION:

There is a connection between the SDQ and some behaviors of the studied children. So, pediatric dentist can have a clue about the child behavior in dental clinic during the first dental visit. Still further research is needed on larger sample size and wider age range with different socioeconomic level to determine the association between the SDQ and child behavior.

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ETHICS APPROVAL:

Ethical approval was obtained from Research Ethics Committee, Faculty of Dentistry, Cairo University with approval number 12 – 6 – 20.

COMPETING INTERESTS



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