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Turkish Paediatric Dentists' Knowledge, Experiences and Attitudes Regarding Child Physical Abuse

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Abstract

Objectives

Numerous studies have shown that the education of health professionals is essential to effectively respond to child abuse. The present study aimed to evaluate Turkish paediatric dentists' knowledge, experiences and attitudes regarding child physical abuse.

Materials and methods

An electronic questionnaire was e-mailed to 518 paediatric dentists. Participants' knowledge of diagnostic indicators of child physical abuse, and their past experiences, attitudes and self-assessment of educational needs were evaluated.

Results

The response rate was 40.9% ($n = 212$). Participants who completed their undergraduate education before 1997 received significantly less education on child physical abuse than participants who completed their education more recently ($P < 0.001$). Although statistically insignificant, participants who completed their doctorate/specialty training after 2012 received increased education on child physical abuse ($P = 0.06$). Of the participants, 43.9% suspected physical abuse; however, only 12.7% reported it. 'I did not know where and how to report' was the most common reason for not reporting physical abuse. The rate of suspicion was higher among dentists from state hospitals or oral health centres ($P < 0.05$). Of the participants, 70.3% did not know about the legal sanctions for delay in or not reporting suspected cases. Only 15.6% assessed themselves as competent to diagnose and report physical abuse. Almost all of them acknowledged their need for more education on this topic.

Conclusion

Turkish paediatric dentists' educational needs for diagnosing and reporting of child physical abuse cases should be met.

Introduction

Reporting and registering are essential for preventing violence against children¹. The World Health Organization's report indicates that few countries have reliable detection and surveillance systems². The report also suggest that 90% of child maltreatment goes unnoticed despite extensive efforts to change this situation. This emphasizes the need for education of health-care personnel to detect and diagnose cases of abuse, and to register and report them appropriately³.

Child physical abuse is any form of behaviour that results in non-accidental physical trauma or injury of a child. It is the second frequently observed form of child abuse after neglect^{4, 5}. Among medical staff, paediatric dentists are uniquely placed to detect physical abuse in a child, as 50%–75% of the reported injuries target the mouth, face and neck^{4, 6–8}. Paediatric dentists also have regular contact with patients and parents, which provides an ideal opportunity to observe the physical and psychological states of both children and their parents⁹. However, the diagnosis of physical abuse may be overlooked or skipped, negatively affecting the child's future⁵.

In 2008, the Turkish Social Services and Child Protection Agency, in collaboration with the United Nations Children's Fund (UNICEF), conducted qualitative research in six provinces¹⁰. In 30 group studies, a total of 235 participants, aged 7–18 years, were interviewed. First the children were asked about the different types of abuse they had witnessed: 56% responded that they had witnessed physical abuse within the last year. In another question, children were asked whether they had been

subjected to physical abuse within the past year. The rate of positive responses to this question was 45%[10](#).

Physically abused children were reported to present with dental trauma[8](#). Paediatric dentists may be the first health-care professionals to examine a child following a traumatic dental injury. Therefore, paediatric dentists should be well trained and prepared with the skills to detect such possible suspicious cases.

The purpose of this study was to investigate the Turkish paediatric dentists' level of knowledge, as well as their experiences and attitudes, regarding child physical abuse.

Materials and Methods

The present observational study was conducted in full accordance with the World Medical Association Declaration of Helsinki. It was approved by Hacettepe University Non-interventional Clinical Research Ethics Board (GO 18/453-16 Date: July 6, 2018).

The project team developed an electronic questionnaire. In this regard, questionnaire forms used in previous studies of a similar geographical region were used as guidance[11-14](#). Before the study questionnaire was finalised, a pilot study of 10 paediatric dentists from the same department was carried out using a draft questionnaire. The version of the questionnaire used in the study, which had been amended in accordance with the feedback received from the pilot study, comprised 36 questions in four parts. The first part contained 10 questions referring to the demographic and occupational characteristics of the participants, as well as their educational background. Part two contained 17 items to assess participants' knowledge of risk factors of child physical abuse (three multiple-choice questions and 14 questions with 'yes/no/not sure' answers). For this part of the questionnaire, relevant information had been gathered from previous publications[2, 15-18](#). The third part comprised six questions regarding past experiences and attitudes (two questions with 'yes/no/not sure' answers and four multiple-choice questions). The fourth part included three self-assessment questions regarding participants' educational needs (two questions with 'yes/no/not sure' answers and one open-ended answer).

The study aimed to reach all professionals in Turkey who had completed a doctorate or specialty training in paediatric dentistry. Hence, those who were continuing their education were excluded. At the time of the study, according to the Turkish Association of Pediatric Dentistry, there were 542 paediatric dentists in Turkey who met the study criteria. Paediatric dentists were invited by e-mail to participate in the study, with the e-mail containing the electronic link to the questionnaire. After the first e-mail, reminders were sent five more times every 2 weeks. Responses were anonymous. The data-collection period ended 12 weeks after the first e-mail was sent.

All statistical analyses were performed by using IBM SPSS Statistics for Windows, Version 21.0, Released 2012 (IBM Corp., Armonk, NY, USA). Number, percentage, mean and SD, median, 25% and 75%, and the smallest and largest values were used as descriptive statistics. The chi-square test and Fisher's exact test were used to evaluate whether the differences between categorical variables were statistically significant. The statistical significance level of all analyses was accepted as 0.05.

Results

The Turkish Association of Pediatric Dentistry provided e-mail addresses of 528 paediatric dentists (467 female, 61 male). Ten paediatric dentists involved in the pilot study were excluded from the study. Of the 518 paediatric dentists who were sent the link, 212 responded and filled out the electronic questionnaire. The response rate was 40.9%. Of the participants, 91% ($n = 191$) were female. The mean age was 34.73 ± 7.03 (median = 33.0; Min-Max = 27–66) years. Distribution of participants with respect to years after completion of undergraduate education and doctorate/specialty training is presented in [Table 1](#).

Table 1. Distribution of participants ($n = 212$) with respect to years after completion of undergraduate education and doctorate/specialty training

Years after training	<i>n</i>	%
Years after undergraduate education		
<5	39	18.4
6–10	93	43.9
11–15	35	16.5
16–20	21	9.9
>20	24	11.3
X \pm SD = 11.30 \pm 7.11; Median 9; 1.–3. Quartiles = 6.0–14.0; Min–Max = 4–42		
Years after doctorate/specialty training		
<2	95	44.8
2–4	41	19.3
5–7	28	13.2
8–10	15	7.1
>10	33	15.6
X \pm SD = 5.31 \pm 6.46; Median 3; 1.–3. Quartiles = 1.0–6.0; Min–Max = 0–35		

Analysis of the results identified that 32.1% of the participants had received education about child abuse during their undergraduate years, while 50.5% and 22.6% had received such education during and after doctorate/specialty training, respectively. The majority of the participants (45.3%) worked in university hospitals, while 28.3% worked in private hospitals, 17.9% worked in public hospitals and 6.6% worked in private practice. Participants who completed their undergraduate education before 1997 had received significantly less education about child physical abuse than participants who completed undergraduate education from 1997 onwards ($P < 0.001$). However, participants with doctorate/specialty training completed after 2012 had received increased education about child physical abuse ($P = 0.06$; statistically non-significant).

The participants' assessments for the family- and victim-related risk factors of child physical abuse are presented in [Table 2](#). Concerning family-related risk factors, the most and least common factors were alcohol/substance addiction (94.8%) and high socio-economic status (8.0%), respectively. As for the factors related to the child (victim), 6.6% of the participants stated they did not know them. The factor most commonly marked was 'to have a physical or mental disability' (86.9%), while premature birth was the least marked risk factor (3.5%).

Table 2. Participants assessment of risk factors for child physical abuse (the risk factors were gathered from related studies in the literature^{2, 15-18})

Risk factors (<i>n</i> = 212)	Yes	
	<i>n</i>	%
Family-related risk factors* (<i>n</i> = 212)		
No idea	0	0
Alcohol/substance abuse	201	94.8
Domestic violence	199	93.9
A parent with depression	177	83.5
A parent abused in childhood	175	82.5
An unwanted pregnancy or illegitimate child	166	78.3
Socio-economic problems (unemployment, etc.)	162	76.4
Step-parents	149	70.3
Living with non-relatives	130	61.3
Having many children	124	58.5
Socially, an isolated family	108	50.9
Having a baby at a young age	99	46.7
High socio-economic status	17	8.0
Child-related risk factors (<i>n</i> = 198)		
No idea	14	6.6
A physical and mental disability†	172	86.9
A result of unwanted pregnancy†	142	71.7
Hyperactivity†	130	65.7
To be female†	73	36.9
To have an anomaly on face†	58	29.3
To have a chronic illness†	55	27.8
To be under 2 years old†	33	16.7
To be the oldest sibling†	27	13.6
To be male†	17	8.6
To be over 2 years old†	16	8.1
Prematurity†	7	3.5

* There was more than one answer, the percentages were calculated over the total.

† There was more than one answer, the percentages were calculated over the total (*n* = 198) which was calculated by subtraction of the participants stating 'no idea' (*n* = 14).

The distribution of participants' responses to some situations that may suggest a case of child physical abuse is shown in *Table 3*. Almost all of the participants stated that a child's fear of going home (99.1%), conflicting stories (98.6%) and a child's fear of their parents (92.9%) might indicate a case of physical abuse. However, claims that the injury was caused by the child himself (50.9%) or by a sibling (30.7%) were not commonly stated by the participants.

Table 3. Distribution of participants' responses for some situations that may suggest child physical abuse (the situations were gathered from related studies in the literature^{2, 15-18})

Situations (<i>n</i> = 212)	Yes	
	<i>n</i>	%
Child's fear of going home	210	99.1
Conflicting stories	209	98.6

Child's fear of their parents	197	92.9
Delay in seeking medical help	189	89.2
A depressed, unhappy and introverted child	184	86.8
Extremely anxious or 'not anxious at all' family	129	60.8
Claim that the child hurt himself	108	50.9
Claim that a sibling injured the child	65	30.7

The participants' knowledge was evaluated by questions 14–27, which included assessment of statements with 'yes/no/not sure' choices ([Table 4](#)). Only 2.9% of participants correctly marked all of the statements. While nearly all of the participants (96%) responded correctly to the statement 'Repeated burns must be regarded as physical abuse', only slightly more than half (58%) responded correctly to the statement 'The burns are often the shape of a hot object'. The statement 'Bruises on the cheek(s) may indicate slapping or grabbing of the face' was considered correct by 97% of the participants. However, only 37% responded correctly to the statement 'Bruises resulting from non-accidental injuries are usually on the skin overlying bony prominences such as forehead, shoulder, elbow and knee'.

Table 4. Participants' responses to the statements about social and diagnostic indicators of child physical abuse (the statements were gathered from related studies in the literature [2](#), [15-18](#))

Statements	Correct answer	% of participants with the correct answer
14. Physical abuse is one of the most important causes of child mortality	True	35
15. Paediatric dentists do not have as much responsibility as physicians for diagnosing physical abuse	False	84
16. Bruises on the cheek may indicate slapping or grabbing of the face	True	97
17. Presence of avulsed or discoloured teeth due to frequent/repeated traumatic dental injuries does not indicate physical abuse	False	69
18. Abrasions and lacerations on the palatal and vestibular areas or floor of the mouth of an infant may indicate forced feeding	True	76
19. Bruises around the neck are usually related to accidental trauma	False	71
20. An abused child usually tells someone soon after the abuse	False	74
21. In most cases, the abuser is someone the child does not know well	False	78
22. Bruises resulting from non-accidental injuries are usually on the skin overlying bony prominences such as forehead, shoulder, elbow and knee	False	37
23. If a child is frequently injured and the lesions on the body are at different healing stages, the condition suggests a possible case of abuse	True	92

24. Laceration of the maxillary labial frenum and ecchymosis on the upper lip in a child under 1 year of age does not suggest a possible case of abuse	False	69
25. The burns are often the shape of a hot object	True	58
26. Repeated burns must be regarded as physical abuse	True	96
27. The bite marks observed in the head and neck region are not a sign of abuse	False	93

No significant effect of previous education (in undergraduate years, during or after doctorate/specialty training) on suspicion of child physical abuse in professional life was found ($P > 0.05$, for each). The same applies to the duration of the participants' experience in the profession ($P > 0.05$). Of all the participants, 43.9% ($n = 93$) stated that they had encountered suspect cases in their professional lives. However, only 12.7% ($n = 27$) had reported them. Almost 80% of all the suspected cases were reported to superiors in the workplace. However, the most common reasons for not reporting a suspected case were stated as 'not knowing how and where to report' (38.5%), 'lack of the documents for reporting' (36.9%), 'the concern about possible further injury to the child' (29.2%), 'the fear of anger from patient relatives' (26.2%) and 'being unsure' (21.5%).

The participants who worked in public hospitals and oral care centres encountered suspect cases of child physical abuse significantly more often than participants who worked in other locations ($P < 0.05$). However, reporting following a suspected case did not differ significantly according to workplace ($P > 0.05$). Similarly, the effect of education and duration of experience in the profession was also not significant for the reporting of a suspected case ($P > 0.05$ for each). More than two-thirds of the participants (70.3%) did not know the legal sanctions encountered by the dental professional who failed to or delayed reporting a suspect in the physical abuse of a child. Only 8.0% of the participants had the correct information about the legal sanctions. Among the participants, 15.6% considered that they were competent enough to diagnose and report physical abuse against children. The majority (96.7%) stated that they wanted more information and education on this matter.

Discussion

Injury in a child resulting from a physical assault is probably the most common type of abuse that paediatric dentists could encounter⁸. Studies have shown that the head and orofacial region are common sites of trauma from child abuse^{4, 7, 8}. Paediatric dentists can provide valuable information and assistance to physicians about orodental signs of child physical abuse.

The present study is one of the few in the literature that has only evaluated paediatric dentists^{19, 20}. In other studies, general dental practitioners, as well as paediatric dentists, were involved^{13, 14, 21}. The response rate, 40.9%, was below that expected. Higher and lower response rates have been obtained in different studies with general dental practitioners and dental hygienists^{11, 12, 19, 20, 22-24}.

The majority of the participating paediatric dentists were female, a fact also reported in other studies^{20, 25}. Almost half of the participants (45.3%) were in the 30–34 years age group, and 44.8% had completed doctorate/specialty training within the last 2 years. There was a large number of recent graduates in the present study, unlike the study of El Sarraf *et al.*²⁰ in which 80% of the participants

had graduated more than 9 years ago. Hence, it could be stated that the majority of participants in the present study were less-experienced paediatric dentists.

The educational status of the participants is limited with regard to child physical abuse: 67.9% did not receive education on child abuse during undergraduate training, and this was also the case for 49.5% of participants during and 77.4% after doctorate/specialty training. When considered with numbers reported in other studies^{12, 13, 22, 26, 27}, this finding indicates the need for more education of dental professionals on this topic at all levels.

Child physical abuse occurs in a variety of forms and is deeply rooted in cultural, economic and social practices². However, the 4th National Child Abuse and Neglect Incidence Study in the USA showed that children from families with low socio-economic status experienced a higher percentage of abuse²⁸. In other studies, having socio-economic difficulties¹⁵ as well as alcohol/substance abuse², domestic violence²⁸ and a parent with depression¹⁵ were also considered as risk factors by the participants. As for the questions dealing with child-related risk factors for physical abuse, the participants mostly marked 'physical and mental disability of the child' and 'being born as a result of an unwanted pregnancy', in parallel to the literature¹⁵. Being male and born prematurely were the factors marked least. However, according to the literature, boys are subjected more commonly to physical abuse than girls, and prematurity also increases the risk^{29, 30}.

The participants were asked to report whether, for some given situations, they would suspect child physical abuse. The claim by the parents that 'his/her sibling hurt the child' was the situation least commonly marked. However, 'child's fear of going home,' 'conflicting stories' or 'delay in seeking medical care' were the situations most commonly marked, similarly to previous studies^{21, 26, 31}. In such situations, paediatric dentists should not be content with the parent's/caregiver's story but should also try to seek ways to obtain more and accurate information on the cause of the injury. Concerning the statements of social and diagnostic indicators of child physical abuse, which were gathered from related studies in the literature^{2, 15-18}, only 2.8% of the participants responded correctly. Nearly two-thirds of the participants responded incorrectly to 'Bruises resulting from non-accidental injuries are usually on the skin overlying bony prominences such as forehead, shoulder, elbow and knee'. Overall, when each item in this section was evaluated separately, the findings were similar to those obtained by previous studies^{12, 21, 22, 26}.

Suspecting child abuse and its reporting are problematic areas in dentistry³². Dalledone *et al.*³³ reported a significant correlation between suspecting child abuse and the duration of experience in the profession. Studies also indicate that, across professional groups, women tend to be more likely than men to suspect and report child maltreatment³⁴. However, the present study was not able to show such tendencies. Considering that the majority of paediatric dentists in Turkey (also the respondents to the questionnaire) are women, a much higher report rate could be expected. The finding may be a result of the relatively smaller number of participants with more experience. However, a significant effect was found between workplace and suspicion of abuse, which was also reported by Azevedo *et al.*³²

In the present study, the duration, content or quality of education on child abuse was not evaluated. For this reason, the characteristics of education are not known comprehensively and could be regarded as a limitation of the study. Traditionally, child abuse has been taught under 'management of traumatic

dental injuries' at both undergraduate and postgraduate levels in Turkey. It was added to the Turkish undergraduate dental education core curriculum in 2014 and to the Turkish Pediatric Dentistry core curriculum in 2011. This might have resulted in 'non-statistically significant' but increased education for participants who have completed doctorate/specialty training in paediatric dentistry after 2012. Further studies that focus on 'quality of education', in terms of content, delivery and satisfaction on behalf of the student, are warranted.

Reporting to a competent authority is the next essential step in properly responding to a suspicious case of child physical abuse. The present study found a 43.9% vs. 12% suspect/report rate. In other studies involving paediatric dentists, suspect vs. report percentages differed^{13, 20, 21, 25, 35}. These findings underline the significant gap between recognising and responding effectively to abuse³⁵. Reasons for not reporting suspected cases of child physical abuse, include 'uncertainty about the diagnosis', which was the most common reason cited in many studies^{13, 14, 21, 24, 35, 36}. 'Not knowing the role of the dentist in reporting'²⁷, 'lack of information'³³ and 'confidentiality concerns'²⁵ were the other reasons. In this study, the lack of information on where to report and documents for reporting were the two main reasons for not reporting suspected cases of child physical abuse. Also, similarly to other studies^{25, 36}, 22% of the participants were aware of the procedures related to reporting. Only 15% stated that they would call the 183 line, which is the primary way of reporting suspected cases of child abuse in Turkey.

The present study also determined the knowledge of paediatric dentists regarding the laws and legal sanctions. Article 280 of the Turkish Penal Code obliges all health-care professionals, including dentists, to report suspected cases of child abuse to a competent authority. Accordingly, a dentist who does not execute these obligations or shows a delay in undertaking this action is sentenced to imprisonment for up to 1 year. Only 9% of the participants were aware of this sanction. Additionally, only 16% were informed about Article 279, which mandates that the dentist is sentenced to imprisonment for 6 months to 2 years if he or she is also a public servant. Only 8% of the participants were able to mark both choices correctly. These findings were remarkably lower than in previous studies^{9, 25, 27, 36}. Although neglect is the most common and reported type of maltreatment in some countries^{37, 38}, the present study dealt only with child physical abuse, in contrast to other studies. A paediatric dentist can readily diagnose child physical abuse during a routine examination, as well as management of a traumatic dental injury^{8, 20}. The present study had limitations. First, it was a non-representative descriptive study only of the paediatric dentists. Therefore, the results cannot be generalised to all dentists in Turkey. Additionally, because of the time required to complete the questionnaire, the desired number of participants may not have been recruited. The majority of the participants were between 27 and 34 years of age, which represented a less-experienced study population. Also, the number of participants working at public hospitals and private practice was low compared with the number working at university hospitals.

Child abuse is a global challenge, and raising awareness is the first step to reduce it worldwide^{39, 40}. The present study draws attention to the inadequacies of Turkish paediatric dentists in the recognition and referral of suspected cases of child physical abuse. Hence, more efforts should be exerted to contribute to the global effort to improve the knowledge, attitude and practice of paediatric dentists/dentists in relation to this social problem.

Conclusions

Within the limitations of the present study, it could be stated that

- the participants did not receive adequate education on child physical abuse.
- only a small number of the participants assessed themselves as sufficient to diagnose child physical abuse.
- for a variety of reasons, the majority of the participants did not report when they encountered a suspected case of child physical abuse.

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Competing interests

The authors declare no competing financial interests, direct or indirect, that exist or may be perceived to exist for individual contributors in connection with the content of this paper. None of the authors of this manuscript has any financial, economic or professional interests that may influence positions presented in the article. In addition, the study has not received any financial support.

Ethics statement

The authors state that the research has been conducted in full accordance with the World Medical Association Declaration of Helsinki. The ethical approval was obtained and the related document has also been submitted during manuscript submission.

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