

**Original Article**

# Knowledge, Personal Views and Experiences of a Group of Dental Interns toward Physical Child Abuse: A Cross-Sectional Study

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## Abstract

**Aim:** This study aimed to assess the knowledge, personal views, and experiences of a group of dental interns toward Physical Child Abuse.

**Subjects and Methods:** A cross-sectional study with convenient sampling was conducted on dental interns practicing in the Pediatric Dentistry and Dental Public Health Department, Cairo University from March to August 2018 using an anonymous, self-administered structured questionnaire. Three hundred questionnaires were distributed each month at the end of the training period, and 238 questionnaires were subjected to statistical analysis to assess Knowledge, personal views, and experiences regarding physical child abuse. Collected data were tabulated and statistically analyzed.

**Results:** The response rate was 79.3% (n=238/300) including 83.6% Egyptians, and 85.7% had no training in dealing with child abuse cases. The participants in the study showed moderate knowledge about the signs and symptoms of physical child abuse. Participants' personal views towards detecting and reporting cases were generally positive, 50.4% of the participants had suspected a case of child abuse before, and only 3% of them reported the cases.

**Conclusions:** Dental interns have moderate knowledge about physical child abuse and positive attitudes towards their role in detecting and reporting these cases.

**Keywords:** Abuse, Child, Dental interns, Egypt, PCA.

## Introduction

Child abuse (CA) is a serious worldwide problem; It is defined according to the World Health Organization (WHO), as "those behaviours that harm or can result in harm a child's health and life by the individuals responsible for children who misuse their physical strength or the trust given to them."<sup>[1]</sup>

Child abuse (CA) takes many forms: Physical abuse (in the form of hitting, beating, and shaking), emotional abuse (in the form of threatening, insulting, and ridiculing), sexual abuse, and neglect (in the form of deficiency of needed food, clothing, shelter, and medical care).<sup>[2]</sup>

According to the American Dental Association (ADA), dentists are responsible for reporting suspected cases of child abuse & neglect (CAN) to appropriate authorities,<sup>[3]</sup> and to be able to do so; the dentists have to be aware of signs and symptoms of different types of CAN that mainly manifest in the head and neck, and learn appropriate techniques for interviewing a potential victim of abuse.<sup>[4]</sup>

In Egypt, children face different types of abuse far beyond the worldwide records, nine out of every ten children are subjected to violent discrepancy practices at home. Nearly seven out of every ten children are exposed to corporal punishment at school.<sup>[5]</sup>

**Mogaddam et al.,**<sup>[6]</sup> conducted a study to assess the Knowledge, attitudes, and behaviours of dentists regarding PCA, using self-administered questionnaires. The study showed insufficient Knowledge about PCA, but participants' attitudes towards detecting and reporting cases were generally positive.

In Egypt, there are very limited available data about the dentist's role in reporting CA cases to legal authorities, there are limited available data about knowledge, personal views, and experiences of dental interns about PCA identification and reporting. Therefore, this study aimed to assess the knowledge, personal views, and experiences of a group of dental interns toward PCA.

## Subjects and Methods

### Study design and participants:

This cross-sectional study was conducted in Pediatric Dentistry and Dental Public Health Department, Faculty of Dentistry, Cairo University from March 2018 to August 2018. The research protocol was approved by the

department research board. Ethical approval was obtained by the ethical committee with the Ethical approval ID 18525. The target participants were dental interns who completed their pediatric dentistry training period in the Pediatric Dentistry and Dental Public Health Department, Faculty of Dentistry, Cairo University.

All interns who graduated from private & governmental faculties of dentistry were included in the study. Both sexes and all nationalities were included. However, Dental interns who refused to participate in the study and attended the pediatric dentistry training period twice were excluded. The aim of the study was clarified by a single investigator and written informed consent was taken from the participants (Appendix 1). Two hundred forty-two questionnaires were distributed, and four questionnaires were excluded due to incomplete data. Then, 238 questionnaires were subjected to statistical analysis.

### Sample size calculation:

The Sample size was determined by the Center of Evidence-Based at the Faculty of Dentistry, Cairo University. A Convenient sampling method was applied to select a group of dental interns that completed their training period in the Pediatric Dentistry and Dental Public Health Department, Faculty of Dentistry, Cairo University.

### The Questionnaire:

The questionnaire was a structured, self-administered questionnaire written in English (Table 1). The questionnaire was based on three previous validated questionnaires done in Jordan, Brazil., and Saudi Arabia.<sup>[7-9]</sup>

The questionnaire was a included 24 questions divided into four sections. The first section included five questions (Q1-5) that surveyed the demographics of the participants. The second section consisted of eleven questions (Q6-16) that addressed the knowledge about social and physical indicators of PCA and the legal authorities to whom CA cases should be reported. The third section consisted of seven questions (Q17-23) asked about the personal views about the role of dentists in detecting and reporting PCA cases using (Likert scale). The fourth section of the questionnaire surveyed the experiences related to PCA, asking if the participants suspected PCA cases in their practice before or not.

One researcher distributed the questionnaires to all the dental interns in the department clinics in the last three days of the training period to ensure that they treated a large number of cases during the month. Thirty minutes were given to the interns to answer all the questions. During answering the questionnaires, participants were not allowed to ask their colleagues about any part of the survey to ensure the accuracy of the results.

Throughout the study, only one researcher dealt personally with participants' questions to clarify any part of the questionnaire or explain anything about the survey, so there was no risk of the same participant filling in more than one questionnaire. After the participants finished answering the whole questionnaires, they were collected by the same researcher. However, only four questionnaires were excluded due to incomplete data. The response rate was 79.3%.

#### **Bias:**

Selection bias was avoided as all the dental interns who completed their training in Pediatric Dentistry and Dental Public Health

Department, Faculty of Dentistry, Cairo University, from March 2018 to August 2018 were included. Performance bias was avoided by providing a standardized procedure to the study by giving the same explanations of the questions to the participants by the same researcher. Information and recall bias was overcome by using a high-quality, self-administrated questionnaire with close-ended questions, in addition to giving the participants sufficient time for adequate recall of long-term memory. Finally, all collected data had been accurately recorded and reported to avoid detection and reporting bias.

#### **Statistical analysis:**

Collected data were analyzed using R statistical analysis software version 4.0.3 for Windows. Categorical data were presented as frequencies and percentages and were analyzed using Fisher's exact test. The significance level was set at  $p \leq 0.05$  within all tests and p-values were adjusted for multiple comparisons using Bonferroni correction.<sup>[10]</sup>

#### **Results**

**First section:** The study included 238 dental interns in the Pediatric Dentistry and Dental Public Health Department, Faculty of Dentistry, Cairo University. Regarding demographic data, 199 (83.6%) of the participants were Egyptians, 135 (56.7%) graduated from a private university, and 204 (85.7%) ( $p < 0.05$ ) had no previous training in dealing with CA cases. In addition, there was a higher percentage of females among the respondents but the difference between males and females was insignificant ( $p = 0.120$ ).

**Second section:** All knowledge questions till Q14 had a significantly higher percentage of "True" answers except for Q6 (Children who have been physically abused will usually tell someone soon after the abuse), a significantly

higher percentage of answers 131(55.0%) was "False".

**Table (1):** Questionnaire

No.	Questions	Answers
Q1	Gender	Male
		Female
Q2	Nationality	.....
Q3	University of graduation	.....
Q4	How many children do you treat per week?	1 – 5
		6 – 10
		11 – 20
		>20
		None
Q5	Did you ever receive formal training about physical child abuse?	yes
		No
Q6	Children who have been physically abused will usually tell someone soon after the abuse.	True
		False
		I don't know
Q7	Physical Child abuse is mainly associated with the stresses of poverty and rarely occurs among high socio-economic levels.	True
		False
		I don't know
Q8	The abuser in most physical abuse cases is someone the child knows well from his/her surrounding environment.	True
		False
		I don't know
Q9	The best way to deal with suspected cases of physical child abuse is to confront the parents and accuse them directly of the abuse.	True
		False
		I don't know
Q10	Bruises over bony prominence are suspicious of child abuse (e.g., chin, elbows and knees)	True
		False
		I don't know
Q11	Repeated injury to the dentition resulting in discolored or avulsed teeth may indicate repeated trauma from abuse	True
		False
		I don't know
Q12	Burns are associated with many child abuse cases	True
		False
		I don't know
Q13	Bite marks on a child should be investigated as an indicator of abuse	True
		False
		I don't know
Q14	A history that is vague and differs every time the parents tells is a possible indicator of abuse	True
		False
		I don't know
Q15	To which legal authority should physical child abuse cases be reported?	Ministry of health
		Police
		NCCM
		I don't know
Q16	Did you know the hotline for reporting child abuse in Egypt	Yes
		No
Q17	Detecting and reporting physical child abuse is important.	Agree
		Neutral

		Disagree
Q18	Dentists have an important role in detecting and reporting physical child abuse.	Agree Neutral Disagree
Q19	Are you able to detect physical child abuse cases?	Agree Neutral Disagree
Q20	Documenting the signs/symptoms of physical child abuse in the patient file is important	Agree Neutral Disagree
Q21	Reporting physical child abuse cases to a legal authority is important.	Agree Neutral Disagree
Q22	Providing physical child abuse education in under graduate curriculum is important.	Agree Neutral Disagree
Q23	In your opinion, what is the main cause of under reporting of physical child abuse cases? (Select only one answer)	Fear of anger from family and parents. Lack of knowledge about referral procedures Uncertainty about the diagnosis Lack of an adequate case history Possible harmful effect on the child No legal authority to report
Q24	Did you ever suspect that a child who came to you professionally has been physically abused?	Yes No
If yes, 24a	How many physical child abuse cases have you ever suspected?	Zero 1-3 cases 4-6 cases > 6 cases
Q24b	Did you report the cases that you suspect?	Yes No
Q24c	What were your first actions when you suspected any cases of physical child abuse (Select only one answer).	Talk to the child and/or parents Reported cases to legal authorities Documented the sign/ symptoms and suspicion in child's file Monitored the case during the following visits Talk to colleague Did not do anything
Q24d	If you did not do anything, why was that?(Select only one answer).	Fear of anger from family Lack of knowledge about referral procedures Uncertainty about the diagnosis Lack of an adequate history Possible harmful effect on the child from the family No legal authority to report
If No, Q24e	Does your work place provide you with procedures to be followed in case a child is suspected to be physically abused?	No Yes

In Q15 (To which legal authority should physical child abuse cases be reported?) and Q16 (Did you know the hotline for reporting child abuse in Egypt?), the majority of respondents 105(44.1%) wrongly chose the police as the legal authority to report CA to, and 219 (92.0%) of them didn't know the hotline number for reporting which is 16000 as shown in table (2).

There was no significant difference between right and wrong answers to questions (6) (Children who have been physically abused will usually tell someone soon after the abuse) and (12) (Burns are associated with many child abuse cases) ( $p>0.05$ ). A significantly higher percentage of respondents answered questions (8) (The abuser in most physical abuse cases is someone the child knows well from his/her surrounding environment), (11) (Repeated injury to the dentition resulting in discolored or avulsed teeth may indicate repeated trauma from abuse), (13) (Bite marks on a child should be investigated as an indicator of abuse), and (14) (A history that is vague and differs every time the parents tells is a possible indicator of abuse correctly), while the significant majority chose the wrong answers for questions (7) (Physical Child abuse is mainly associated with the stresses of poverty and rarely occurs among high socio-economic levels), (9) (The best way to deal with suspected cases of physical child abuse is to confront the parents and accuse them directly of the abuse), (10) (Bruises over bony prominence are suspicious of child abuse), (15) (To which legal authority should physical child abuse cases be reported?) and (16) (Did you know the hotline for reporting child abuse in Egypt?), as shown in table (2).

**Third section:** The majority of the respondents agreed to questions from Q17 until Q22 except

for Q19 which asked about the ability of the participant to detect PCA cases; most of the answers were "Neutral" 117(49.2%) ( $p<0.001$ ). In Q23, most of the participants chose lack of good history as the leading cause for not reporting an abuse case 73(30.7%) ( $p<0.001$ ), as shown in table (3).

**Fourth section:** In Q23 (In your opinion, what is the main cause of under reporting of physical child abuse cases?), One hundred and twenty participants (50.4%) reported suspecting PCA cases before, among whom most of them had encountered 1-3 cases 100 (83.3%), did not report the case they suspected 117(97.5%), and talked to the child or the parents as their first action 72(60.0%) ( $p<0.001$ ). There was no significant difference between the different causes for not doing anything about the case ( $p=0.719$ ).

Moreover, the majority of those who hadn't suspected any CA cases before 118(49.6%) stated that their workplaces don't provide procedures for facing CA cases 100(84.7%) ( $p<0.001$ ), as shown in table (4).

## Discussion

Physical child abuse is one type of CAN that results from the intentional use of physical force against the child and harms his health and survival.<sup>[11-12]</sup> Child protection can be done caregivers collaborating with anyone in direct contact with children, such as health care providers (Pediatricians and dentists), teachers, and caregivers, by reporting any doubted cases to authorities. Dentists can especially do this role as they may be the first to remark signs of violence in children, where the areas they routinely examine are frequently affected. So, their knowledge, personal views, and experience regarding PCA are essential.<sup>[12-13]</sup>

**Table (2):** Frequency and percentage (%) for answers to questions regarding knowledge about physical child abuse

Question	Answers	N	%	P value
Q6	True	60 <sup>B</sup>	25.2%	<0.001*
	False	131 <sup>A</sup>	55.0%	
	I don't know	47 <sup>B</sup>	19.7%	
Q7	True	128 <sup>A</sup>	53.8%	<0.001*
	False	91 <sup>B</sup>	38.2%	
	I don't know	19 <sup>C</sup>	8.0%	
Q8	True	178 <sup>A</sup>	74.8%	<0.001*
	False	24 <sup>B</sup>	10.1%	
	I don't know	36 <sup>B</sup>	15.1%	
Q9	True	123 <sup>A</sup>	51.7%	<0.001*
	False	77 <sup>B</sup>	32.4%	
	I don't know	38 <sup>C</sup>	16.0%	
Q10	True	110 <sup>A</sup>	46.2%	<0.001*
	False	72 <sup>B</sup>	30.3%	
	I don't know	56 <sup>B</sup>	23.5%	
Q11	True	157 <sup>A</sup>	66.0%	<0.001*
	False	58 <sup>B</sup>	24.4%	
	I don't know	23 <sup>C</sup>	9.7%	
Q12	True	129 <sup>A</sup>	54.2%	<0.001*
	False	71 <sup>B</sup>	29.8%	
	I don't know	38 <sup>C</sup>	16.0%	
Q13	True	148 <sup>A</sup>	62.2%	<0.001*
	False	52 <sup>B</sup>	21.8%	
	I don't know	38 <sup>B</sup>	16.0%	
Q14	True	183 <sup>A</sup>	76.9%	<0.001*
	False	0	0.0%	
	I don't know	55 <sup>B</sup>	23.1%	
Q15	Ministry of health	16 <sup>D</sup>	6.7%	<0.001*
	Police	105 <sup>A</sup>	44.1%	
	NCCM	78 <sup>B</sup>	32.8%	
	don't know	39 <sup>C</sup>	16.4%	
Q16	No	219 <sup>A</sup>	92.0%	<0.001*
	Yes	19 <sup>B</sup>	8.0%	

Different superscript letters indicate a statistically significant difference within the same question \*; significant ( $p \leq 0.05$ ) ns; non-significant ( $p > 0.05$ )

**Table (3):** Frequency and percentage (%) for answers to questions regarding personal views about physical child abuse

Question	Answers	n	%	P value
Q17	Agree	226 <sup>A</sup>	95.0%	<0.001*
	Neutral	12 <sup>B</sup>	5.0%	
	Disagree	0	0%	
Q18	Agree	199 <sup>A</sup>	83.6%	<0.001*
	Neutral	37 <sup>B</sup>	15.5%	
	Disagree	2 <sup>C</sup>	0.8%	
Q19	Agree	99 <sup>A</sup>	41.6%	<0.001*
	Neutral	117 <sup>A</sup>	49.2%	
	Disagree	22 <sup>B</sup>	9.2%	
Q20	Agree	212 <sup>A</sup>	89.1%	<0.001*
	Neutral	19 <sup>B</sup>	8.0%	
	Disagree	7 <sup>C</sup>	2.9%	
Q21	Agree	204 <sup>A</sup>	85.7%	<0.001*
	Neutral	27 <sup>B</sup>	11.3%	
	Disagree	7 <sup>C</sup>	2.9%	
Q22	Agree	216 <sup>A</sup>	90.8%	<0.001*
	Neutral	16 <sup>B</sup>	6.7%	
	Disagree	6 <sup>C</sup>	2.5%	
Q23	Fear of anger from family and parents.	43 <sup>B</sup> <sup>C</sup>	18.1%	<0.001*
	Lack of knowledge about referral procedures	61 <sup>A</sup> <sup>B</sup>	25.6%	
	Uncertainty about the diagnosis	21 <sup>D</sup>	8.8%	
	Lack of an adequate case history	73 <sup>A</sup>	30.7%	
	Possible harmful effect on the child	1 <sup>E</sup>	0.4%	
	No legal authority to report	39 <sup>C</sup>	16.4%	

Different superscript letters indicate a statistically significant difference within the same question \*; significant ( $p \leq 0.05$ ) ns; non-significant ( $p > 0.05$ )



**Table (4):** Frequency and percentage (%) for answers to questions regarding experiences related to physical child abuse

Question	Answers	n	%	p-value
Q24	No	118	49.6%	0.897ns
	Yes	120	50.4%	
If yes Q24a	Zero	0	0.0%	<0.001*
	1-3 cases	100 <sup>A</sup>	83.3%	
	4-6 cases	14 <sup>B</sup>	11.6%	
	> 6 cases	6 <sup>B</sup>	5.0%	
If yes Q24b	No	117	97.5%	<0.001*
	Yes	3	2.5%	
If yes Q24c	Talk to the child and/or parents	72 <sup>A</sup>	60.0%	<0.001*
	Reported cases to legal authorities	4 <sup>C</sup>	3.3%	
	Documented the sign/ symptoms and suspicion in child's file	1 <sup>C</sup>	0.83%	
	Monitored the case during the following visits	4 <sup>C</sup>	3.3%	
	Talk to colleague	16 <sup>B</sup>	13.3%	
	Did not do anything	23 <sup>B</sup>	19.2%	
	If yes Q24d	Fear of anger from family	3	
Lack of knowledge about referral procedures	6	27.3%		
Uncertainty about the diagnosis	3	13.6%		
Lack of an adequate history	4	18.2%		
Possible harmful effect on the child from the family	0	0.0%		
No legal authority to report	6	27.3%		
If no Q24e	No	100	84.7%	<0.001*
	Yes	18	15.3%	

Different superscript letters indicate a statistically significant difference within the same question \*; significant ( $p \leq 0.05$ ) ns; non-significant ( $p > 0.05$ )

Self-administered questionnaires are the best method to investigate dental interns knowledge, personal views, and experiences towards PCA.<sup>[14-16]</sup>

The current study included 238 dental interns. Unfortunately, the first section of the questionnaire (Background & training) showed that most of the participants (85.7%) didn't receive previous formal training regarding PCA;

a lack of training programs was previously reported by Mogaddam et al.,<sup>[6]</sup> who observed that only 13.9 % of respondents received formal CA training. In contrast, Gopalakrishna et al.,<sup>[17]</sup> found that 61.3% of the dental participants (Dental students & dental interns) had received education about CA during their undergraduate years; this may be due to the recent guidelines and further recommendations from the human rights committee.

In the second section regarding Knowledge about PCA, most of the participants in the present study answered correctly about knowledge related to physical and social signs of abuse except for Q7, Q9, and Q10.

In Q7, 61.8% of the respondents wrongly thought that PCA exclusively occurs among low socioeconomic levels. According to Sonbol et al., and Mogaddam et al.,<sup>[6-7]</sup> the model answer for this question was false. On the other hand, according to the Centers for Disease Control and Prevention (CDC), poverty is the leading risk factor for CAN; its rates are five times higher for children in families with low socioeconomic status compared to those with higher socioeconomic status.<sup>[18]</sup> This result was comparable to Khatib & Beltagy<sup>[21]</sup>, who previously reported that 60% of the dental interns included in the study believed that CAN are rarely occurring among middle or high-income earners. In contrast, Mogaddam et al.,<sup>[6]</sup> found that only 30.1% of the participants believed that PCA exclusively occurs among low socioeconomic families:

In Q9 (The best way to deal with suspected cases of PCA is to confront the parents) 67.6% of the participants reported a significantly higher wrong answer (either true or don't know answers). the model answer was (False) according to Sonbol et al.<sup>[7]</sup>. The present results were different from results reported by Mogaddam et al.,<sup>[6]</sup> that showed that only 35% of the participants thought wrongly that it is better to confront the parents to protect children from subsequent abuse. In Q10, 69.7% of dental interns thought wrongly that bruises over bony prominence were suspicious of PCA or didn't know the answer, and the model answer was (False) according to Sonbol et al.<sup>[7]</sup>. This result coincides with Gopalakrishna et al.,<sup>[17]</sup> who reported that the majority (67.3%) of dental interns and undergraduate dental participants in

Saudi Arabia could not recognize that bruises over bony prominences do not indicate CAN, but indicates accidental injuries.

Regarding knowledge about legal authorities to which suspected cases should be reported, in Q15 the majority of the participants (67.2%) wrongly answered the question asked about the legal authority to which abuse cases should be reported. However, most of them thought that reporting cases are essential. Also, most of the participants (92%) didn't know the reporting hotline number.

The model answers to questions from Q6 to Q9 and Q15 were taken from the validated questionnaire done in Saudi Arabia by Mogaddam et al.<sup>[6]</sup>, and answers to questions from Q10 to Q14 were taken from a validated questionnaire done in Jordan by Sonbol et al.<sup>[7]</sup>

These results were far from the results of the study done by Mogaddam et al.,<sup>[6]</sup> who reported that only 37% of the participants don't know the legal authority to which the physical abuse cases should be reported. This may be because this study didn't include only dental interns; it also had pediatric dentists with more experience, and also the child helpline 1600 in Egypt became operational recently in 2005.<sup>[20]</sup>

Regarding the personal views about PCA in the third section, the participants had positive personal views towards dentists' role in detecting and reporting cases of PCA. This coincides with studies done in Saudi Arabia by Mogaddam et al. and Gopalakrishna et al.,<sup>[6,17]</sup>

Interestingly in Q19, that asked about the participant's ability to detect PCA cases, 90.8% of the participants assumed that they were able to detect a case of PCA, which coincide with the levels reported in Saudi Arabia by Gopalakrishna et al.<sup>[17]</sup> which stated that

92.4% of the dental participants reported that they could differentiate CAN from accidental injuries and a bit different from results by Mogaddam et al.,<sup>[6]</sup> who reported that 77% of the participants were able to detect a case of PCA.

In the fourth section (Experiences), 49.6% of the participants suspected of PCA cases before. Although the majority (83.3%) recorded that they suspected (1-3 cases), only 2.5 % of them reported these cases. This was similar to Khattab & Beltagy,<sup>[21]</sup> who reported that although 45% of the participants suspected PCA cases before, 19.2% reported these cases which were slightly higher than the rate of reporting in the present study. In contrast, Mogaddam et al.<sup>[6]</sup> reported that only 11% of the participants had suspected PCA cases before, and 3% of them reported these cases. This may be because most of the participants were general dental practitioners who had on average one year of experience and didn't treat children daily as participants of the present study.

### Conclusions

Physical child abuse is a serious public health problem and dentists especially have an essential role in detecting, documenting, and reporting these cases. Although most participants didn't receive previous PCA formal training, they showed moderate knowledge and positive personal views towards their role in identifying and reporting abuse. Almost half of the participants detected abuse cases before. Still, they didn't report the cases due to the lack of knowledge about referral procedures and not knowing the legal authorities to report. Unfortunately, dental interns didn't know the hotline for reporting such cases (Child Helpline: 16000).

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### Conflict of Interest:

The authors declare no conflict of interest.

### Patient declaration of consent:

Written informed consents explaining the aim and the full details of the study were signed by the participants before the distribution of the questionnaire. Participants were given the freedom to withdraw from the study at any point.

### Data Availability statement:

The data set used in the current study is available on request from.

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