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## Assessment of Physical Child Abuse Awareness among Pediatric Registrars in Khartoum State, Sudan

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**Received:** September 26, 2022

### Abstract

**Background:** Physical abuse of a child is an action that results in actual or potential physical harm. It is in the form of an interaction, which is reasonably within the control of a parent or person in a position of responsibility, power, or trust. It may be of single or repeated incidents. The number of reports about children being abused and molested in the country is growing. So, this study is conducted to assess awareness of the residents toward this issue as they are the first-line responder.

**Materials and Methods:** This was a multicenter hospital-based study of the pediatric residents of Sudan Medical Specialization Board (SMSB) throughout the country. A sample size of 170 residents was calculated and randomly assigned by simple random sampling from the list of 736 registered pediatric residents at SMSB. The study questionnaire, structured into items on awareness of child abuse, developed by the researcher, pretested and validated, was filled as a written form. Descriptive analysis of knowledge and practice responses of the residents was conducted with SPSS version 26.0 (IBM SPSS Statistics). Chi-square was calculated for awareness scores/grades against socio-demographic characteristics of the respondents and the level of significance was set at  $p < 0.05$ . The study was approved by SMSB and ethical clearance was obtained.

**Results:** A total of 174 pediatric residents were involved in the study. The majority of the participants (81%- $n = 141$ ) were females, more than half of the study participants (58%) were aged between 22 to 30 years. Regarding their level of training, 20.1% (35) were R1, 2.3% (4) were R2, 47.1% (82) were R3 and 30.5% (53) were R4. The majority of the residents 146 (85.1%) had good knowledge, and 26 (14.9%) of them had poor knowledge, 73.6% (128) of the study participants have encountered a suspicious case of physical abuse among their children's patients, less than half of the participants (42.5%,  $n = 74$ ) have ever reported a suspicious case of child abuse and 57.5% (100) of them have never reported a suspicious case, 14.4% (25) of the residents have seen a definite case of physical abuse in the last 6 months, 90.8% (158) of the doctors thought that that identification and reporting mechanism of suspicion of possible child physical abuse should be part of vocational training course.

**Conclusion:** The study showed that pediatric residents: Revealed accepted good knowledge and inappropriate practice. More than half of the residents in our study did not know any mechanism for reporting child physical abuse, and only 30.5% knew the reporting mechanisms. There is a lack of educational training and education regarding child abuse. Reporting systems for child abuse cases are weak. There is a strong impact of training on the ability to detect child abuse cases which leaves us to relentlessly emphasize the importance of training and call for filling the gap by implementing a comprehensive training program for medical personnel that includes child abuse detection. On the other hand, formulating a reporting and a referral system for such cases to ensure that they inevitably reach the Family and Child Protection Units for appropriate management.

**Keywords:** *Assessment; Awareness; Child; Abuse; Pediatric; Khartoum; Sudan*

### Introduction

Child abuse and neglect are one of the most prevalent and significant social problems in the world. In general, abuse refers to (usually deliberate) acts of commission while neglect refers to the acts of omission [1,2].

According to the World Health Organization, child abuse and child maltreatment can be referred to as “all forms of physical and/or emotional, ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child’s health, survival, development or dignity in the context of a relationship of responsibility, trust or power.” Different rules apply to different cultures regarding acceptable parenting practices [3].

Health status including mental and physical health largely depends on the quality of education and life in this period [4]. Therefore, a silent and safe transition requires the support of family and community [5]. Child abuse includes many harmful activities and procrastination in performing parental tasks and responsibilities, leading to physical or mental harm, physical abuse, sexual abuse, misbehaving or neglecting the child, and death of the child [5-7]. Evidence suggests that the severity of child abuse tends to propagate, so early detection and intervention are now crucial in preventing victims from suffering severe abuse [8]. Child abuse may cause stress, leading to changes in the nervous, cardiovascular, and immune systems, and metabolism [9]. Child abuse would form inappropriate personality features and increase risk behaviors among children [10]. Doctors have moral and legal responsibilities to report these cases to relevant governmental authorities or social welfare organizations to provide early interventions for victims and perpetrators and prevent further abuse [11].

There are five subtypes of child maltreatment which can be distinguished physical abuse, sexual abuse, neglect and negligent treatment, emotional abuse, and exploitation [3]. Physical abuse of a child can be defined as an action that results in actual or potential physical harm. It is in the form of an interaction, which is reasonably within the control of a parent or person in a position of responsibility, power, or trust. It may be of single or repeated incidents. Child sexual abuse is the sexual activity that involves a child which the child does not fully comprehend, is unable to give informed consent, or for which the child is not developmentally prepared, or that violates the laws of society. Child sexual abuse is evidenced by activity between a child and an adult or another child who by age or development is in a relationship of responsibility, trust, or power; the activity being intended to gratify or satisfy the needs of another person. This may include but is not limited to the inducement or coercion of a child to engage in any unlawful sexual activity, the exploitative use of a child in prostitution or other unlawful sexual practices, and the exploitative use of children in pornographic performances and materials. Emotional abuse can be defined as the failure of a caregiver to provide an appropriate and supportive environment and includes acts that harm the emotional health and development. Neglect refers to the inattention or omission to provide for the proper development of the child by the

parent or caregiver including all aspects such as health, education, emotional development, proper nutrition, shelter and safe living conditions, which in the context of the family or caretakers are reasonably available resources and causes or has a high probability of causing harm to the child's health or physical, mental, spiritual, moral, or social development. This includes the failure to properly supervise and protect children from harm as much as is feasible. Exploitation refers to commercial or other exploitation of a child in work (child labor), or other activities for the benefit of others, such as child trafficking [12].

Physical, behavioral, and emotional manifestations of abuse vary between children, depending on the child's stage of development when the abuse occurs, the severity of the abuse, the relationship of the perpetrator to the child, the length of time over which the abuse continues, and other factors in the child's environment [12].

### Materials and Methods

#### Study design

A multicenter hospital-based cross-sectional study.

#### Study area

The study area was the pediatric hospitals, to which pediatric residents of the Sudan Medical Specialization Board (SMSB) are distributed for their residency training.

#### Study duration

Data collection was carried out from the 1<sup>st</sup> of October 2021 to January 2022.

#### Study population

Residents of pediatrics registered at the Sudan Medical Specialization Board (SMSB).

#### Study variables

Socio-demographic characteristics of the registrars. Diagnostic practices of the registrars. The attitude of the registrars towards management and reporting child abuse.

#### Data collection tools and methods

An anonymous questionnaire was developed by the researcher, pretested, and validated. The questionnaire was structured into items on awareness of physical child abuse. Due to the Covid-19 pandemic outbreak, residents assigned for the study were contacted on an individual basis by telephone to fill out the questionnaire as.

#### Data analysis

The primary aim of this study was to assess the knowledge and practices of the residents regarding awareness of child abuse. Data entry and analysis were carried out using SPSS version 26.0 (IBM SPSS Statistics). Responses were summarized as mean  $\pm$  SD for numerical variables and as frequency counts and percentages for categorical variables. Cross tabulation was carried out between knowledge and

practice scores/grades and between knowledge and practice scores/grades against all socio-demographic characteristics of the respondents. A Chi-square test was conducted and the level of significance was set at  $p < 0.05$ .

### Ethical considerations

The study proposal was approved by the Research Unit of the SMSB. Ethical clearance was obtained from the Ethical Committee of SMSB. Pediatric residents were informed about the purpose of the research, the value of their contribution and confidentiality was ascertained as the questionnaire is anonymous. Residents were free to participate in the study.

### Results

A total of 174 pediatric residents were involved in the study. The majority of the participants (81%- $n = 141$ ) were females, and 19% (33) of them were males. More than half of the study participants (58%) were aged between 22 to 30 years, 32.8% of them were between 30 to 35 years, 8.0% were between 35 to 40 years, and 1.1% were more than 40 years old. The majority of the residents (90.2%) were from Khartoum state, 2.3% were from Jazeera state, 1.1% were from Nile State, and 0.6% were from Al-Gadarif State or White Nile State. Regarding the residency city, 69% of the patients were from Khartoum, 12.1% of them were from Bahri and 9.2% were from Omdurman. Details about the residency city are illustrated in. Regarding their level of training, 20.1% (35) were R1, 2.3% (4) were R2, 47.1% (82) were R3, and 30.5% (53) were R4. The vast majority of the doctors (99.4% - $n = 173$ ) were working in hospitals, and only one resident was working in a private facility. Half of the residents (50%) consider their knowledge about child abuse to be moderate, 5.7% consider themselves to have very good knowledge, 36.2% consider themselves to have good knowledge, and 8% of them thought they had poor knowledge. Participants were asked to rate their awareness of the signs and symptoms of child abuse using a scale from 0 to 10, 23.6% choose "5", 17.2% choose "6" or "7", 14.4% choose "8", and 10.9% choose "4". More data about the candidate's response. Participants were asked to rate their awareness of the diagnosed child's physical abuse, 25.9% of them choose "7", 18.4% choose "5", 14.4% choose "6", and 13.8% choose "8". More data about the resident's responses. 69.5% (121) of the residents in our study did not know any mechanism for reporting child physical abuse, and only 30.5% (53) knew the reporting mechanisms. 87.9% (153) of the residents in our study thought that the delay in seeking medical advice should raise suspicion of possible child abuse, while 12.1% (21) of them thought the opposite. 72.4% (126) of the residents thought that the complaint should be relevant to the history given by the caregiver otherwise abuse is suspicious, however, 27.6% (48) thought the opposite. 73.6% (128) of the doctors believed that the presenting complaint should be in the context of the age of the child otherwise abuse is suspicious, nevertheless, 26.4% (46) disagreed. The majority of the residents (85.1%) had good knowledge, and 14.9% of them had poor knowledge. During their professional experience, 73.6% (128) of the study participants encountered a suspicious case of physical abuse among their children's patients. Less than half of the participants (42.5%,  $n = 74$ ) have ever reported a suspicious case of child abuse, and 57.5% (100) of them have never reported a suspicious case. During the last 6 months, 29.3% (51) of the residents have seen a suspicious case of child abuse, and 70.7% (123) of them have not seen any case. Further, 23% (40) of the residents have seen any type of child abuse in the last 6 months and 77% (134) have not seen any type of child abuse. Only 14.4% (25) of the residents have seen a definite case of physical abuse in the last 6 months, and 85.6% (149) of them have not seen any cases of physical abuse. Only 8.6% of the study participants had reported a suspicious or definite case of child abuse to authorities in the last 6 months, and 91.4% (159) have not reported any case. 81% of the residents stated that they need training on how to identify and on the mechanism for reporting suspicion of possible child abuse, while 19% thought they don't need training. 90.8% (158) of the doctors thought that the identification and reporting mechanism of suspicion of possible child physical abuse should be part of the vocational training course, yet, 9.2% (16) disagreed. Participants were asked to rate the extent that they are willing to get involved in detecting child physical abuse, 23.6% choose "10", 20.7% choose "5", 12.6% choose "7", 11.5% choose "8", and 10.3% choose "6". More details are illustrated. 25.3% (44) of the residents in our study had education or training and e-learning exercises on the awareness of child abuse,

and 74.7% (130) did not have any education or training. No statistically significant association was found between the resident’s knowledge and their gender ( $P = 0.789$ ). 87.9% of the male patients had good knowledge compared to 84.4% of the female patients (Table 1). No statistically significant association was found between the resident’s knowledge and their age ( $P = 0.928$ ) (Table 2). No statistically significant association was found between the resident’s knowledge and whether they have seen any suspicious case of physical abuse ( $P = 0.338$ ). However, 75% of the residents who had ever seen a suspicious case of physical abuse, compared to 25% of those who have not seen any suspicious case of physical abuse (Table 3). No statistically significant association was found between the resident’s knowledge and their residency level ( $P = 0.223$ ) (Table 4). The knowledge was good in 86.8% of the R4 residents, 84.1% of the R3, 50% of the R2 and 88.6% of the R1. No statistically significant association was found between the resident’s knowledge and history of having education or training ( $p = .835$ ) (Table 5).

			Total knowledge			P-value
			Poor	Good	Total	
Gender	Male	Count	4	29	33	0.789
		%	12.1%	87.9%	100.0%	
	Female	Count	22	119	141	
		%	15.6%	84.4%	100.0%	

Table 1: The association between the resident’s knowledge and their gender.

Age		Total knowledge			P-value
		Poor	Good	Total	
22 - 30	Count	16	85	101	0.928
	%	15.8%	84.2%	100.0%	
30 - 35	Count	8	49	57	
	%	14.0%	86.0%	100.0%	
35 - 40	Count	2	12	14	
	%	14.3%	85.7%	100.0%	
40+	Count	0	2	2	
	%	0.0%	100.0%	100.0%	

Table 2: The association between the resident’s knowledge and their age.

			Total knowledge		P-value
			Poor	Good	
In your professional experience have you ever seen a suspicious case of physical abuse among your child patients?	Yes	Count	17	111	0.338
		%	65.4%	75.0%	
	No	Count	9	37	
		%	34.6%	25.0%	
Total		Count	26	148	
		%	100.0%	100.0%	

Table 3: The association between the resident’s knowledge and whether they have seen any suspicious case of physical abuse.

Residency level		Total knowledge			P-value
		Poor	Good	Total	
R1	Count	4	31	35	0.223
	%	11.4%	88.6%	100.0%	
R2	Count	2	2	4	
	%	50.0%	50.0%	100.0%	
R3	Count	13	69	82	
	%	15.9%	84.1%	100.0%	
R4	Count	7	46	53	
	%	13.2%	86.8%	100.0%	

**Table 4:** The association between the resident's knowledge and their residency level.

### Discussion

A worldwide phenomenon that can affect children of all ages; however, the highest incidence of abuse occurs in infants and toddlers. Four principal categories are defined: physical abuse, emotional abuse (also commonly referred to as psychological maltreatment), sexual abuse, and neglect. Children may fall under 1 or a combination of the different categories. An ongoing process that can take place in a family, institutional, or community setting, either by someone close to the child, such as a parent or primary caregiver, or, more rarely, by a stranger. Determining whether injuries have been caused accidentally or represent abuse is often challenging. Finding 1 or more suspicious injuries in a child should warrant a full evaluation to look for other injuries typical of abuse. While legislation such as mandatory reporting varies among countries, the overriding principle of “paramourty” (i.e. that the welfare of the child is paramount) is universal. In Sudan, a total of three Family and Child Protection Units (FCPU) have been established, one in each of the three large localities of Khartoum State. They frequently receive cases of child abuse. Nevertheless, it is assumed that many more cases never reach the units [14]. Studies regarding matters on child abuse in Sudan are deficient, The Emergency Department is the main gate or entry of crisis-based health care visits, thus it is believed to be the first encounter with a health care service for the abused child and therefore the main opportunity for abused children to be identified and managed [14]. In the presented study the majority of the residents (85.1%) had good knowledge regarding child abuse, this result is considered high when it comes in compare with a study performed in Saudi Arabia by Abdulrhman Aldukhayel [15] which showed that the knowledge level was found to be moderate and high at 68.8% and 28.4% respectively. This result is also this the result is lower than the study coached by Safar A Alsaleem [16] in which 96.3% of the physicians recorded good awareness levels regarding child abuse. In the presented study 14.9% of the study participant had poor knowledge of child abuse, seminal contributions have been made by Anshula Deshpande [17] when they reported that 10.8% of the doctors had poor knowledge, and considerably higher than Abdulrhman Aldukhayel’s study [15] when he showed that the knowledge level is poor in 2.7%. In the presented study 69.5% (121) of the residents in our study did not know any of the mechanisms for reporting child physical abuse and only 30.5% (53) knew the reporting mechanisms, this consists with Işıl Pakiş result [18] when he states that 58.4% of participants thought that, “difficulties encountered in the legal process and had difficulties in reporting events. Most of the pediatric residents 73.6% (128) of the study participants reported that they encountered a suspicious case of physical abuse among their children’s patients during their work, (42.5%, n = 74) have ever reported a suspicious case of child abuse, during the last 6 months, 29.3% (51) of the residents have seen a suspicious case of child abuse, 14.4% (25) of the residents have seen a definite case of physical abuse in the last 6 months. This result is scary and indicates that the child abuse percentage is high. For instance, in a study conducted by Turkia [19], a total of 263 (72.3%) physicians thought that there was a specific law on physical child abuse in the Turkish Republic. The present study only provides a first

insight into how pediatric residents are aware of physical child abuse in their daily routine. The strengths of the study also include that it is cross-sectional of all pediatric residents of the SMSB who were appropriately sampled and filled out the questionnaire. By its nature (a cross-sectional), the study design and method adopted are limited by its collected information on residents' self-reported information. Hence, the residents' practice responses might be prone to bias as overestimation of their activities due to the formal circumstance of the questionnaire. It is known that on such occasions, people tend to express what they consider the right view/belief or behavior rather than the actual one. Also, the responses obtained might depict a good image of the conduct suggested by the residents. However, it was not possible to use statistical tools to measure the accuracy of responses and no attempts were made to determine actual clinical practice. Nevertheless, future studies with appropriate study design and methods will have to focus on investigating how doctors deal with child abuse in detail.

### Conclusion

The insights generated by this study will be helpful to guide future better design and prioritize communication about child abuse directed at pediatricians. The findings of the study showed that pediatric residents: Revealed accepted good knowledge and inappropriate practice. More than half of the residents in our study did not know any mechanism for reporting child physical abuse, and only 30.5% knew the reporting mechanisms. There is a lack of educational training and education regarding child abuse. Reporting systems for child abuse cases are weak. There is a strong impact of training on the ability to detect child abuse cases which leaves us to relentlessly emphasize the importance of training and call for filling the gap by implementing a comprehensive training program for medical personnel that includes child abuse detection. On the other hand, formulating a reporting and a referral system for such cases to ensure that they inevitably reach the Family and Child Protection Units for appropriate management.

### Recommendations:

1. Adoption of standard guidelines and/or construction of local practice protocols on child abuse detection and management.
2. Active educational efforts and activities for the residents in the practice of pediatrics.
3. Raising awareness of pediatricians about this issue, through various medical activities (contiguous medical education programs, conferences, courses, workshops, etc.), is critically needed to improve the situation.
4. Dissemination of information and publications on the high prevalence and serious impact of the condition on the child can draw attention to the magnitude and seriousness of child abuse.
5. Future studies with a larger study population and different design to focus on investigating how pediatricians approach child abuse in detail.

### Sources of Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

### Conflict of Interest

The author has declared that no competing interests exist.



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**Volume 11 Issue 12 December 2022**

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**Citation:** Mosab Nouraldein Mohammed Hamad, et al. "Assessment of Physical Child Abuse Awareness among Pediatric Registrars in Khartoum State, Sudan". *EC Paediatrics* 11.12 (2022).