

# Knowledge, attitude, and practice regarding child maltreatment among health care providers working in primary care centers in Riyadh, Saudi Arabia

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## ABSTRACT

**Objective:** The aim of the study was to assess the level of knowledge, attitudes, and current practice of primary healthcare physicians and nurses employed at the National Guard affiliated Primary Care Centers related to child abuse and neglect. **Method:** A cross-sectional study was conducted at four National Guard affiliated Primary Care Centers, Riyadh, Kingdom of Saudi Arabia, from May to September 2019. A total of 308 physicians and nurses participated in the study, using a convenience sampling technique. After obtaining informed consent, data was collected with a self-administered questionnaire. **Results:** The overall attitude score was excellent in 64.2% of the sample. The majority (90.3%) had an excellent knowledge score. The study indicated that the married group and participants with more than 10 years of experience were more aware of child maltreatment reporting procedures compared to the non-married group and less experienced participants. Almost two-thirds of the sample (67.2%) agreed that child abuse and neglect are underreported in Saudi Arabia. Lack of knowledge was the most frequent reason for underreporting. **Conclusion:** Our study highlighted that most of the primary care physicians and nurses at King Abdulaziz Medical City had excellent knowledge and positive attitudes related to child maltreatment. However, a major knowledge deficit exists in terms of the reporting procedures of suspected child maltreatment cases.

**Keywords:** Child abuse, child maltreatment, child neglect, family medicine, primary care

## Introduction

Child maltreatment (CM) has been identified as a major public health problem of the healthcare system globally.<sup>[1]</sup> According to the World Health Organization (WHO), approximately one in every 4 children has been a victim of physical maltreatment at some point during their lives.<sup>[2]</sup> Child abuse is a term that includes

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Received: 18-12-2020

Revised: 10-03-2021

Accepted: 04-04-2021

Published: 30-09-2021

### Access this article online

#### Quick Response Code:



Website:  
www.jfmpc.com

DOI:  
10.4103/jfmpc.jfmpc\_2492\_20

abuse of any individual under the age of 18 years with physical or emotional injury, secondary to omission or commission of actions against the child.<sup>[3]</sup> Abuse has many forms and can present as physical, emotional, sexual, neglect, or exploitation by the caregiver.<sup>[4-6]</sup> Different countries have different norms regarding what is considered acceptable child parenting practice.<sup>[5]</sup> The National Health Committee for Prevention of Violence and Maltreatment defined physical maltreatment as “Infliction of an injury on a child (by beating, shaking, kicking, burning, biting, suffocating, or poisoning) regardless of the perpetrator’s intention.”<sup>[3]</sup> Another definition provided for neglect is “failure

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**How to cite this article:** Alkathiri MA, Baraja MA, Alaqeel SM. Knowledge, attitude, and practice regarding child maltreatment among health care providers working in primary care centers in Riyadh, Saudi Arabia. J Family Med Prim Care 2021;10:3198-204.

to provide the child's affordable basic needs (including food, clothes, vaccination, healthcare, education, and safety) by his/her parents or any other caregiver.<sup>[13]</sup>

Child abuse and neglect (CAN) was not recognized as a major public health issue in the Kingdom until the early 2000s.<sup>[7-9]</sup> Prior to that, only 11 reports of CAN were published as case studies and the report of the first case detected was in 1990.<sup>[7]</sup> In 2005, significant progress was made when the government created the National Family Safety Program (NFSP).<sup>[7]</sup> This program has contributed to establish child protection centers (CPC), hospital-based child protection teams, a child support hotline, and increases awareness at medical and public levels.<sup>[7,10]</sup> However, despite these efforts, child maltreatment is still underreported.<sup>[1,7,10,11]</sup>

A few studies were performed to report the incidence of child maltreatment in the Gulf area. For example, in 2012, a study was conducted in AlKharj to determine the incidence of child abuse and neglect in adolescents.<sup>[12]</sup> They reported the incidence of psychological abuse (74.9%), physical abuse (57.5%), exposure to violence (50.7%), neglect (50.2%), and sexual abuse (14%).<sup>[12]</sup> Another regional study was performed in Kuwait to assess the prevalence of child abuse among high school students using standard scales related to psychological, physical, and sexual abuse.<sup>[13]</sup> The results indicated that 18% were exposed to psychological abuse by their caregivers, 8.6% claimed being attacked sexually, and 5.9% reported being threatened to have sexual intercourse.<sup>[13]</sup> In addition, a review study in the Kingdom to determine the prevalence of child maltreatment between 2000 and 2015 reported that physical abuse and neglect were the most frequent forms of maltreatment.<sup>[14]</sup>

Any experience of maltreatment during childhood may reflect in the child's physical, mental, and social health later in life.<sup>[4,15,16]</sup> A cross-sectional study conducted in Saudi Arabia, indicated a strong correlation between exposure to stressful or traumatic childhood experiences and the development of risky behaviors, diseases, disabilities, and even premature mortality later in life.<sup>[17]</sup> The Kuwaiti study stated that being a victim of child maltreatment will increase the individual's chance to develop multiple psychological disorders, including depression, anxiety, and low self-esteem.<sup>[13]</sup> In addition, CM adds a considerable financial burden on the country's economy.<sup>[18]</sup> Based on the latter, early detection and intervention to prevent complications later in life are pivotal. Although many child protection organizations have been established, child abuse is still considered underreported globally.<sup>[1,7,10,11]</sup>

Primary healthcare physicians and nurses play an essential role in the early detection and reporting of child abuse cases, as they may be the first contact for those victims. In Saudi Arabia, most of the child maltreatment cases are reported by hospitals.<sup>[8]</sup> Limited international literature reported the knowledge, attitudes, and experience of primary healthcare providers related to this debilitating health issue. In 2010, a study with 171 general practitioners (GPs) in Hong Kong revealed that only 15 (8.9%)

had formal training regarding the management of child abuse cases. In addition, only 61 GPs (35.8%) reported every suspected case of child maltreatment.<sup>[19]</sup> In total, 79 physicians (46.2%) had an experience of cases with suspected physical abuse, and only a third ( $n = 29$ , 36.7%) reported all the suspected cases. In terms of suspected sexual abuse cases, 40 GPs (23.4%) had prior experience and only 19 (47.5%) reported all suspected cases.<sup>[19]</sup> A national study was done in the United States (US) with pediatric, emergency, and family medicine residents to assess their level of knowledge and training related to child abuse management. The study concluded that family medicine residents had the lowest level of training in child abuse compared to pediatric and EM residents, and their mean knowledge score was the lowest of the three groups.<sup>[20]</sup> To date, the knowledge, attitude, and practice of primary healthcare physicians and nurses of child maltreatment have not been studied in-depth in Saudi Arabia.

The aim of our study was to assess the level of knowledge, attitudes, and current practice of primary healthcare providers and nurses related to CAN. This study was conducted in the four main National Guard affiliated primary healthcare centers in Riyadh, Saudi Arabia, which serve a large portion of the Riyadh population.

## Material and Methods

This study was designed as a descriptive cross-sectional study. It was conducted in four National Guard affiliated primary care centers, located in Riyadh, Kingdom of Saudi Arabia: Health Care Specialty Center (HCSC), National Guard Comprehensive Specialized Clinic (NGCSC), King Abdulaziz City Housing (Iskan-Yarmouk), and King Saud City Housing (Dirab).

The study targeted all the primary healthcare physicians, family medicine residents, and nurses working at the four National Guard primary care centers. Physicians with different specialties employed at the primary care centers were excluded from the study.

The sample size was obtained by using online OpenEpi epidemiologic free calculator. With 350 as our estimated target population, the sample size was obtained based on 58.2% average knowledge score of family physicians.<sup>[20]</sup> By using a 95% confidence interval (CI), 5% margin of error, and a design effect of 1.5, the acquired sample size was 272. However, all the available primary healthcare providers and nurses working in the four National Guard primary care centers were included in this study. In this study, we used a convenience sampling technique due to the difficulty to generate sampling frame. We collected data from all available participants of our target population.

The sample completed a self-administered questionnaire after obtaining their consent. The questionnaire was in English and it contained 31 questions, divided into four sections:

- 1<sup>st</sup> section contains eight questions about demographic and personal/professional characteristics.

- 2<sup>nd</sup> section consisted of eight questions regarding attitudes.
- 3<sup>rd</sup> section contains seven questions regarding the current practice.
- 4<sup>th</sup> section consisted of eight questions to evaluate the level of knowledge.

The questionnaire was developed after a comprehensive literature search and content validation was performed by three consultants in different specialties (Family medicine/General pediatrics/Pediatric psychiatry). The questionnaire pretesting was conducted with ten subjects from our target population to ensure the clarity and accuracy of the tool. The approximate time to complete the questionnaire was 5 min.

Data was entered and analyzed using the Statistical Package for the Social Sciences version 20 (SPSS, 20) software. Descriptive statistics were performed with frequency and percentage for the categorical variables, and a mean and standard deviation (SD) for the continuous variables. Analytic statistics was done using a Chi-square test to assess differences between categorical variables. The means were compared using an independent student *t*-test and ANOVA. Statistical significance was set at 0.05 or less.

## Scoring

### Knowledge score

The participants' knowledge score regarding child abuse and neglect was obtained by eight questions, including the definition, types, reporting procedures, risk factors, and future consequences of child maltreatment.

Each item was given 1 point for a correct response with a maximum of 16. The level of knowledge was divided into three categories:

- Poor knowledge (Total: 0–5 points).
- Moderate Knowledge (Total: 6–10 points).
- Excellent Knowledge (Total: 11–16 points).

### Attitude score

The attitude score related to child abuse and neglect was measured with 8 multiple-choice questions using a Likert scale (strongly disagree, disagree, neutral, agree, and strongly agree).

Each question accrued 5 points based on the response, with 5 points for the correct response and 1 point for the least correct response, with a maximum of 40. The attitude score was divided into three categories:

- Poor attitude (Total: 8–18 points).
- Moderate attitude (Total: 19–29 points).
- Excellent attitude (Total: 30–40 points).

This study was conducted after obtaining approval from the Institutional Research Board of King Abdullah International Medical Research Center (KAIMRC), with the study number of RC19/022/R. No identifiers were collected from the participants. All data were confidential for research purpose only and kept in a secure place within the National Guard premises, both hard

and soft copies. An informed consent form was obtained from each participant before completing the questionnaire (Date of IRB approval: 25-02-2019).

## Results

### Demographics

In total, 387 questionnaires were distributed to the target population, and 308 responded, resulting in a response rate of (79.5%). The age of the sample ranged from 21 to 63 years, with a mean of  $37.8 \pm 9.9$  years. Almost half (48.7%) were Saudi nationals. The majority of the sample (76%) were female, 73.7% were married, and more than half (58.8%) had two children or less. The majority of the sample were nurses (53.3%), followed by physicians (28.2%) and residents (18.5%). The physicians included staff physicians, assistant/associate consultants, and consultants. The demographic information related to the sample is listed in Table 1.

### Attitude

The overall attitude score was excellent in 190 participants (64.2%), moderate in 105 (35.5%), and poor in 1 (0.3%). The majority (55.9%) agreed that child abuse is a major issue in Saudi Arabia; however, 30.2% agreed that the present supportive services to manage child abuse and neglect are adequate. Two-thirds of the participants (67.2%) agreed that child abuse is underreported in Saudi Arabia. The majority (70.4%) agreed that reporting child abuse should not be limited to life-threatening injuries. Regarding reporting suspected cases of child abuse, 93.5% believed that it should be mandatory. In addition, 89% agreed that child abuse and neglect could be prevented. The attitude of the sample to child maltreatment is summarized in Table 2.

**Table 1: Demographic information of the sample**

| Variable           | Frequency | %    |
|--------------------|-----------|------|
| Age                |           |      |
| Below 40 years     | 155       | 52.7 |
| 40 years and above | 139       | 47.3 |
| Gender             |           |      |
| Male               | 71        | 23.1 |
| Female             | 237       | 76.9 |
| Nationality        |           |      |
| Saudi              | 150       | 48.7 |
| Non-Saudi          | 158       | 51.3 |
| Marital status     |           |      |
| Married            | 81        | 73.7 |
| Not married        | 227       | 26.3 |
| Number of children |           |      |
| 2 or less          | 104       | 58.8 |
| Above 2            | 73        | 41.2 |
| Years in practice  |           |      |
| 10 or less         | 160       | 54.6 |
| More than 10       | 133       | 45.4 |
| Profession         |           |      |
| Residents          | 57        | 18.5 |
| Doctors            | 87        | 28.2 |
| Nurses             | 164       | 53.2 |

## Practice

More than half of the sample (53.7%) indicated that they have managed suspected cases of child abuse in their practice. It is noteworthy that the majority (89.9%) were willing to report any suspected case of child maltreatment they may encounter.

In our study, 52% of the sample were aware of the reporting procedures. A small proportion (8.4%) had sufficient prior training to manage child abuse and neglect cases. The majority (95.1%) were willing to receive additional training related to the management of suspected cases of child abuse [Table 3].

## Knowledge

The overall knowledge score was poor in 2 participants (0.6%), moderate in 28 (9.1%), and excellent in 278 (90.3%). The vast majority of the sample (95.1%) knew the correct definition of child abuse. Less than one-fourth (22.7%) were aware of the most frequent type of child abuse in Saudi Arabia.

Two-thirds of the sample (75.6%) were aware of the presence of the Saudi National Program to protect against child abuse and neglect and 71.1% were familiar with the Child Protective Service at King Abdulaziz Medical City. A notable concern is that only half (51.3%) knew where to report a suspected case of child abuse. Most of the sample (94.2%) were cognizant of the long-term medical, psychological, and social sequelae of experiencing child abuse and neglect [Graph 1].

## Risk factors

The sample agreed that parents with a psychiatric illness (97.7%), a history of drug or alcohol abuse (97.4%), a child with behavioral

problems or mental retardation (97.1%), or a child with chronic diseases or special needs (93.0%) are major factors increasing the risk of child abuse.

## Reasons for underreporting

As shown in Graph 2, the three most frequent reasons for underreporting, from the perspectives of the sample, were lack of knowledge about reporting procedures (56.8%), fearing of destroying family relationship (54.5%), and uncertainty about the diagnosis (41.9%).

## Relationship between sociodemographic information and practices related to child abuse

In the current study, more male participants (67.6%) managed suspected cases of child abuse in their practice compared to the female group (49.6%), ( $P$ -value = 0.008). Married participants (58.2%) were more aware of the child abuse reporting procedures at their hospitals compared to the non-married group (34.6%), ( $P$ -value < 0.000). Doctors managed the majority of suspected cases of child abuse (70.9%) followed by residents (49.1%) and nurses (46.3%) ( $P$ -value < 0.05). In addition, the doctor group was more aware of child abuse reporting procedures (60.5%) compared to the other professions ( $P$ -value < 0.000). Regarding the years of experience, participants with more than 10 years of experience managed more suspected cases of child abuse (60.6%,  $P$  value = 0.033) and had more sufficient training (14.3%,  $P$  value = 0.001). In addition, the group with more experience was more aware of the reporting procedures (63.4%) ( $P$ -value < 0.000) and more were willing to report suspected cases (94.7%) ( $P$ -value = 0.016).

**Table 2: Attitudes of the sample related to child abuse**

| Question  | Strongly disagree | Disagree    | Neutral    | Agree       | Strongly agree |
|---|-------------------|-------------|------------|-------------|----------------|
| Child abuse is a major issue of healthcare system in Saudi Arabia                                 | 19 (6.2%)         | 31 (10.1%)  | 86 (27.9%) | 109 (35.4%) | 63 (20.5%)     |
| Child abuse and neglect is subjected to tradition and cultural differences                        | 22 (7.1%)         | 31 (10.1%)  | 66 (21.4%) | 140 (45.5%) | 48 (15.6%)     |
| The present supportive services to deal with child abuse and neglect in Saudi Arabia are adequate | 33 (10.7%)        | 87 (28.2%)  | 91 (29.5%) | 77 (25%)    | 16 (5.2%)      |
| Reporting child abuse and neglect should be mandatory   | 9 (2.9%)          | 1 (0.3%)    | 10 (3.2%)  | 103 (33.4%) | 185 (60.1%)    |
| Reporting child abuse and neglect should be limited to life threatening injuries                  | 111 (36.2%)       | 105 (34.2%) | 19 (6.2%)  | 46 (15%)    | 24 (7.8%)      |
| Early detection of child maltreatment cases will decrease morbidity/mortality of the victim       | 13 (4.2%)         | 3 (1%)      | 10 (3.2%)  | 103 (33.4%) | 178 (57.8%)    |
| Child abuse and neglect can be prevented  | 5 (1.6%)          | 9 (2.9%)    | 20 (6.5%)  | 137 (44.5%) | 137 (44.5%)    |
| Child abuse is underreported in Saudi Arabia  | 11 (3.6%)         | 15 (4.9%)   | 70 (22.7%) | 119 (38.6%) | 88 (28.6%)     |

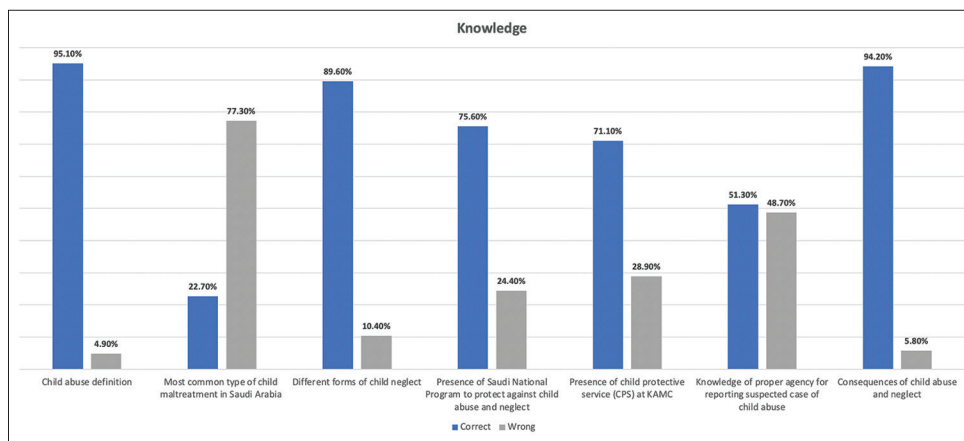
**Table 3: Practices related to child abuse**

| Variables   | Yes (%)    | No (%)     |
|---|------------|------------|
| Have you ever faced any suspected case of child abuse?  | 165 (53.7) | 142 (46.3) |
| Have you ever had any training to deal with suspected case of child abuse?                                  | 58 (18.8)  | 250 (81.2) |
| Do you have enough training to deal with cases of child abuse and neglect?                                  | 26 (8.4)   | 282 (91.6) |
| Are you willing to receive further training on how to deal with suspected cases of child abuse and neglect? | 292 (95.1) | 15 (4.9)   |
| Are you aware of the reporting procedures of child abuse at your hospital?                                  | 159 (52)   | 147 (48)   |
| Are you willing to report suspected cases of child abuse?   | 276 (89.9) | 31 (10.1)  |

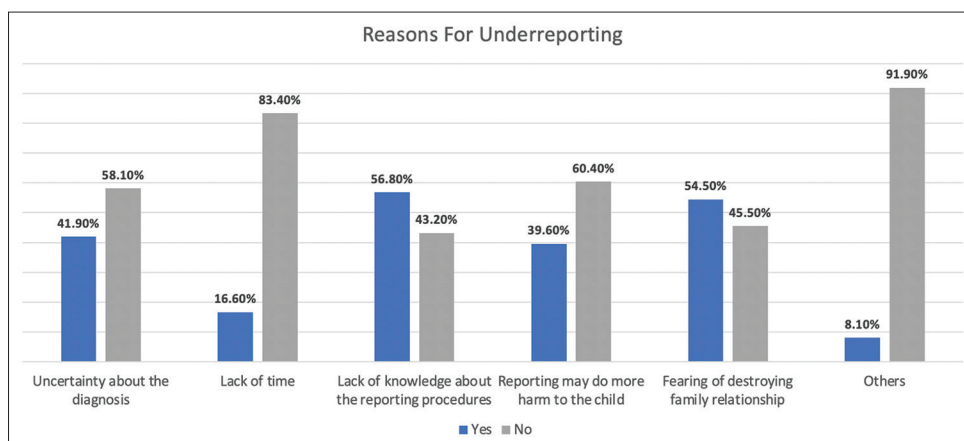


**Table 4: The association between sociodemographic information and the knowledge and attitude scores**

| Demographic variables | Knowledge Score |            |             |       | Attitude Score |             |             |       |
|-----------------------|-----------------|------------|-------------|-------|----------------|-------------|-------------|-------|
|                       | Poor            | Moderate   | Excellent   | P     | Poor           | Moderate    | Excellent   | P     |
| Gender                |                 |            |             |       |                |             |             |       |
| Male                  | 0 (0%)          | 3 (4.2%)   | 68 (95.8%)  | 0.191 | 1 (1.4%)       | 21 (30%)    | 48 (68.6%)  | 0.118 |
| Female                | 2 (0.8%)        | 25 (10.5%) | 210 (88.6%) |       | 0 (0%)         | 84 (37.2%)  | 142 (62.8%) |       |
| Marital Status        |                 |            |             |       |                |             |             |       |
| Married               | 1 (0.4%)        | 22 (9.7%)  | 204 (89.9%) | 0.626 | 1 (0.5%)       | 77 (35.2%)  | 141 (64.4%) | 0.827 |
| Not                   | 1 (1.2%)        | 6 (7.4%)   | 74 (91.4%)  |       | 0 (0%)         | 28 (36.4%)  | 49 (63.6%)  |       |
| Years of Practice     |                 |            |             |       |                |             |             |       |
| ≤10                   | 1 (0.6%)        | 13 (8.1%)  | 146 (91.3%) | 0.990 | 0 (0%)         | 53 (34.9%)  | 99 (65.1%)  | 0.552 |
| >10                   | 1 (0.8%)        | 11 (8.3%)  | 121 (91%)   |       | 1 (0.8%)       | 44 (34.1%)  | 84 (65.1%)  |       |
| Profession            |                 |            |             |       |                |             |             |       |
| Doctors               | 0 (0%)          | 5 (5.7%)   | 82 (94.3%)  | 0.032 | 0 (0%)         | 20 (23.3%)  | 66 (76.7%)  | 0.001 |
| Residents             | 0 (0%)          | 1 (1.8%)   | 56 (98.2%)  |       | 0 (0%)         | 13 (23.2%)  | 43 (76.8%)  |       |
| Nurses                | 2 (1.2%)        | 22 (13.4%) | 140 (85.4%) |       | 1 (0.3%)       | 105 (35.5%) | 190 (64.2%) |       |



**Graph 1: Knowledge of the sample related to child abuse**



**Graph 2: Reasons for underreporting child abuse cases**

### The association between sociodemographic information and the knowledge and attitude scores

Table 4 displays the association between the demographic information and the knowledge and attitude scores. In our study, the residents had more excellent knowledge scores (98.2%, *P* value = 0.032) and attitude scores (76.8%, *P* value = 0.01) compared to the other two groups.

### Discussion

CAN is recognized as a serious global problem, affecting children from all social classes and has significant consequences on the victim's physical, psychological, and social well-being.<sup>[15,17,21]</sup> Literature report that the severity of child maltreatment tends to increase with time, and the failure of early detection increases

the victim's risk for further injuries and complications.<sup>[19,22-24]</sup> Primary care physician and nurses have a continuous relationship with families and are often the first healthcare providers to be contacted after an injury. The assessment of their knowledge, attitude, and practice is important due to their crucial role in detecting and preventing CAN cases.

Our study shows that most of the participants (90.3%) had excellent knowledge scores. Surprisingly, more residents had an excellent score compared to senior physicians and nurses ( $P < 0.05$ ). This may be due to updated knowledge, continuous reading, and active participation in awareness campaigns during their medical school and residency program. In addition, it might be due to the introduction of child maltreatment in the curriculum of the Family Medicine residency program.<sup>[25]</sup> Although neglect is the most frequent type of child maltreatment in Saudi Arabia,<sup>[8,9,26]</sup> only 22.7% of the sample were aware of this fact. Almost half (48.7%) did not know where to report suspected CAN cases. These findings are similar to local studies conducted in Abha and Alqassim among primary care physicians, reporting that most of the respondents had a good awareness level and knowledge regarding child abuse and neglect.<sup>[22,27]</sup> Two studies with pediatricians indicated that despite good basic knowledge of CAN, they observed major deficits in the reporting procedures.<sup>[8,9]</sup>

In contrast, studies performed in China, India, and Turkey with different healthcare professionals and family physicians concluded that the participants had an inadequate level of knowledge to identify potential CAN cases.<sup>[18,28-30]</sup> These differences, compared to the local studies, might be due to different cultural backgrounds and governmental mandating policies to report suspected CM cases. A US study found that Family Medicine residents had a poor level of knowledge and were least confident in managing CM cases compared to emergency medicine and pediatric residents.<sup>[20]</sup> They concluded the difference to the limited training and resources provided to Family Medicine residents, relative to others.<sup>[20]</sup>

Despite the predominance of the female gender (76.9% female vs 23.1% male), no statistically significant differences were found. However, married participants were more aware of the reporting procedures ( $P$ -value  $< 0.05$ ). An explanation is that being married with children could raise awareness related to CAN. The awareness of the reporting procedures was significantly associated with the years of experience and profession. Physicians and the group with more than 10-year experience were more aware of the reporting procedures compared to residents, nurses, and participants with less experience ( $P$ -value  $< 0.05$ ). This may be due to doctors having the main responsibility of the management plan, with more opportunities to fully examine the patients. These positive associations of senior physicians and experienced participants with a high level of awareness of CM are supported by Alsaleem *et al.*<sup>[22]</sup> and Aldukhayel *et al.*<sup>[27]</sup>

Although more than half of the participants (53.7%) have managed suspected CM cases, a large proportion (48%) was

not aware of the reporting procedures. This highlights a major deficiency in managing the challenges related to this public health crisis experienced in the healthcare system.

The majority of participants (64.2%) had an excellent attitude score with physicians scoring higher compared to nurses ( $P < 0.05$ ). Similar positive attitudes toward CAN were reported in pediatricians and family doctors.<sup>[8,22,27]</sup> Despite the high awareness of the Saudi National Program to protect against CM and the Child Protective Service at KAMC, only 30.2% considered the current services and programs to be adequate.

Failure to report CM cases is a concern for the healthcare system as evidence states that CAN is still underreported.<sup>[1,7,10,11]</sup> The majority of the sample (67.2%) agreed that CAN is underestimated in Saudi Arabia. They agreed that the lack of knowledge about the reporting procedures was the most frequent cause of underreporting, followed by fearing to destroy family relationships and uncertainty about the diagnosis. An unclear reporting procedure was also reported as the most frequent perceived barrier in the Alsaleem *et al.*<sup>[22]</sup> study. In contrast, lack of sufficient evidence, unwillingness to be involved in the legal system, and insufficient time were the three most important perceived barriers reported by Hong Kong GPs.<sup>[19]</sup>

In conclusion, our study indicates that most of the PHC physicians and nurses at KAMC had excellent knowledge and positive attitudes toward CAN. However, participants had a major gap and insufficient knowledge about reporting procedures of suspected CM cases. In addition, several barriers contributing to the problem of underreporting were identified. A national effort, campaigns, and media materials targeting public and healthcare providers are recommended to improve awareness of this serious health issue.

### Declaration of patient consent

The authors certify that they have obtained all appropriate participant consent forms. In the form, the participants have given their consent for their images and other clinical information to be reported in the journal. The participants understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

### References

1. Jawadi A, Benmeakel M, Alkathiri M, Almuneef M, Philip W, Almunaser M. Characteristics of nonaccidental fractures in abused children in Riyadh, Saudi Arabia. *Saudi J Med Med Sci* 2019;7:9-15.

2. WHO. INSPIRE: Seven strategies for ending violence against children. Luxembourg 2016 [cited 2020 Oct 22]. Available from: <https://www.who.int/publications/i/item/inspire-seven-strategies-for-ending-violence-against-children>.
3. Program TNFS. Hospital Based Child Maltreatment National Registry - Annual Report 2016 [cited 2020 Feb 15]. Available from: [https://nfsp.org.sa/ar/projects/NationalRecord/Documents/NFSR%202016\\_Ar\\_En.pdf](https://nfsp.org.sa/ar/projects/NationalRecord/Documents/NFSR%202016_Ar_En.pdf).
4. CDC. Preventing Child Abuse and Neglect 2020 [updated April 7, 2020; cited 2020 Oct 22]. Available from: [https://www.cdc.gov/violenceprevention/childabuseandneglect/fastfact.html?CDC\\_AA\\_refVal=https%3A%2F%2Fwww.cdc.gov%2Fviolenceprevention%2Fchildabuseandneglect%2Fdefinitions.html](https://www.cdc.gov/violenceprevention/childabuseandneglect/fastfact.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fviolenceprevention%2Fchildabuseandneglect%2Fdefinitions.html).
5. Etienne G. Krug LLD, James A. Mercy, Anthony B. Zwi and Rafael Lozano. World report on violence and health: UN World Health Organization (WHO); 2002. [cited 2019 Feb 20]. Available from: <https://www.refworld.org/docid/54aa8f744.html>.
6. Gateway CWI. Definitions of Child Abuse and Neglect Washington, DC2019 [cited 2020 Feb 20]. Available from: <https://www.childwelfare.gov/pubPDFs/define.pdf>.
7. Al Eissa M, Almuneef M. Child abuse and neglect in Saudi Arabia: Journey of recognition to implementation of national prevention strategies. *Child Abuse Negl* 2010;34:28-33.
8. Alnasser Y, Albijadi A, Abdullah W, Aldabeeb D, Alomair A, Alsaddiqi S, *et al.* Child maltreatment between knowledge, attitude and beliefs among Saudi pediatricians, pediatric residency trainees and medical students. *Ann Med Surg (Lond)* 2017;16:7-13.
9. Habib HS. Pediatrician knowledge, perception, and experience on child abuse and neglect in Saudi Arabia. *Ann Saudi Med* 2012;32:236-42.
10. Almuneef M, Al-Eissa M. Preventing child abuse and neglect in Saudi Arabia: Are we ready? *Ann Saudi Med* 2011;31:635-40.
11. Al-Eissa M, Saleheen H, AlMadani S, AlBuhairan F, Weber A, Fluke JD, *et al.* Determining prevalence of maltreatment among children in the kingdom of Saudi Arabia. *Child Care Health Dev* 2016;42:565-71.
12. Al-Eissa MA, AlBuhairan FS, Qayad M, Saleheen H, Runyan D, Almuneef M. Determining child maltreatment incidence in Saudi Arabia using the ICAST-CH: A pilot study. *Child Abuse Negl* 2015;42:174-82.
13. Al-Fayez GA, Ohaeri JU, Gado OM. Prevalence of physical, psychological, and sexual abuse among a nationwide sample of Arab high school students: Association with family characteristics, anxiety, depression, self-esteem, and quality of life. *Soc Psychiatry Psychiatr Epidemiol* 2012;47:53-66.
14. Mogaddam M, Kamal I, Merdad L, Alamoudi N, Meligy O. Prevalence of child abuse in Saudi Arabia from 2000 to 2015: A review of the literature. *J Oral Hyg Health* 2015;3:189.
15. Almuneef M, ElChoueiry N, Saleheen H, Al-Eissa M. The impact of adverse childhood experiences on social determinants among Saudi adults. *J Public Health (Oxf)* 2018;40:e219-27.
16. Gateway CWI. Long-Term Consequences of Child Abuse and Neglect Washington, DC2019 [cited 2020 Feb 21]. Available from: [https://www.childwelfare.gov/pubPDFs/long\\_term\\_consequences.pdf](https://www.childwelfare.gov/pubPDFs/long_term_consequences.pdf).
17. Almuneef M, Qayad M, Aleissa M, AlBuhairan F. Adverse childhood experiences, chronic diseases, and risky health behaviors in Saudi Arabian adults: A pilot study. *Child Abuse Negl* 2014;38:1787-93.
18. Li X, Yue Q, Wang S, Wang H, Jiang J, Gong L, *et al.* Knowledge, attitudes, and behaviours of healthcare professionals regarding child maltreatment in China. *Child Care Health Dev* 2017;43:869-75.
19. Leung PW, Wong WC, Tang CS, Lee A. Attitudes and child abuse reporting behaviours among Hong Kong GPs. *Fam Pract* 2010;28:195-201.
20. Starling SP, Heisler KW, Paulson JF, Youmans E. Child abuse training and knowledge: A national survey of emergency medicine, family medicine, and pediatric residents and program directors. *Pediatrics* 2009;123:e595-602.
21. Almuneef M, Hollinshead D, Saleheen H, AlMadani S, Derkash B, AlBuhairan F, *et al.* Adverse childhood experiences and association with health, mental health, and risky behavior in the kingdom of Saudi Arabia. *Child Abuse Negl* 2016;60:10-7.
22. Alsaleem SA, Alsaleem MA, Asiri AM, Alkhidhran SS, Alqahtani WS, Alzahrani MS, *et al.* Knowledge and attitude regarding child abuse among primary health care physician in Abha, Saudi Arabia, 2018. *J Family Med Prim Care* 2019;8:706-10.
23. Azizi M, Shahhosseini Z. Challenges of reporting child abuse by healthcare professionals: A narrative review. *J Nurs Midwifery Sci* 2017;4:110-6.
24. Elarousy W, Abed S. Barriers that inhibit reporting suspected cases of child abuse and neglect among nurses in a public hospital, Jeddah, Saudi Arabia. *East Mediterr Health J* 2019;25:413-21.
25. SCFHS. Saudi Board for Family Medicine Curriculum 2020 [cited 2020 July 23]. Available from: <https://www.scfhs.org.sa/MESPS/TrainingProgs/TrainingProgsStatement/Documents/Family%20Medicine%202020.pdf>.
26. Program TNFS. Hospital Based Child Maltreatment National Registry - Reports 2017-2019. [Report]. In press 2020.
27. Aldukhayel A, Aljarbou E, Alturki FM, Almazayad NS, Alsaqer OM, Almutairi R. Knowledge and attitude regarding child abuse among primary healthcare physicians and interns in Al Qassim, Saudi Arabia. *Cureus* 2020;12:e12270.
28. Yadav S, Datta M. Assessment of knowledge of family physicians regarding risk factors associated with child abuse. *Int J Med Res Prof* 2017;3:301-5.
29. Kirankumar S, Noorani H, Shivprakash P, Sinha S. Medical professional perception, attitude, knowledge, and experience about child abuse and neglect in Bagalkot district of north Karnataka: A survey report. *J Indian Soc Pedod Prev Dent* 2011;29:193-7.
30. Solak Y, Yoldascan BE, Okyay RA. Assessment of the knowledge, awareness, and attitudes of family physicians in Adana regarding child abuse and neglect. *J Public Health (Berl.)* 2020. <https://doi.org/10.1007/s10389-020-01220-3>