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Evaluation of the impact of the COVID-19 pandemic on the reporting of maltreatment cases to the National Family Safety Program in Saudi Arabia

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ABSTRACT

Introduction: The COVID-19 pandemic represents a global and nationwide public health crisis. Although protective, socially restrictive measures may cause social isolation, which amounts to an increased ecological risk for mental health disturbance in vulnerable populations. Previous reports have suggested a significant association between the occurrence of public health crises and increased rates of multiple risk factors related to child mental health disturbances, domestic violence, and child-maltreatment.

Methodology: We conducted a retrospective data review of reported child maltreatment cases from the National Family Safety Program during the period of September 2019 to September 2020. A descriptive analysis approach was used to compare rates before and during the COVID-19 pandemic.

Results: During COVID-19, abuse was significantly more reported by a family member than by the victims themselves or by a healthcare worker. However, before COVID-19, the offender was less often reported to be known to the victim; was both parents or the mother but was more often described as male, older, single, less educated; and currently unemployed with no significant change observed in their health status ($p < 0.001$). Interestingly, the predicted type of abuse also significantly differed and was more emotional or sexual than other types ($p < 0.001$).

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Conclusion: The types of abuse and the characteristics of both abused children and offenders saw significant changes during the COVID-19 pandemic. Sexual and emotional abuses were reported more frequently, and the male gender is considered to feature more commonly in reports prior to the pandemic era than during the pandemic.

1. Introduction

COVID-19 was declared a global pandemic by the World Health Organization (WHO) on March 11, 2020 (WHO, 2020). Since that date, multiple measures have been adopted by countries to protect their people. These measures were presented as essential tools to overcome this crisis and protect healthcare systems against the high morbidity of COVID-19 infection (Adly et al., 2020). Some of the adopted measures include curfews, social isolation and distancing, travel restrictions, and stay-at-home orders (Who.int, 2021). Although these measures can effectively control the spread of disease, they can also have a profound impact on society and have social, financial, and psychological repercussions (Brooks et al., 2020). For example, isolation may expose or worsen vulnerabilities due to a lack of established social support systems (Hwang et al., 2020).

Furthermore, quarantine conditions are associated with alcohol abuse, depression, and posttraumatic stress symptoms (Brooks et al., 2020). The psychological impacts of quarantine include anger, confusion, posttraumatic stress symptoms, and increases in substance use (Brooks et al., 2020). Through all of this, children are particularly vulnerable to the risk of domestic violence (Unicef.org, 2021a,b).

Before the COVID-19 pandemic, the rates of child maltreatment are alarming. For example, in the United States, one in eight children has confirmed maltreatment by child protective services (CPS) in their lifetime (Boserup et al., 2020a,b). Among these, the recurrence of maltreatment is high. Reports from different countries have highlighted an increased risk of domestic violence and abuse of vulnerable people (Hindley et al., 2006). Studies exploring the impact of natural disasters on violence have found that domestic violence often reports a substantial increase after catastrophic events (Enarson, 1999). There are reports of an increase in the demand for preventive violence services in many countries and reports of increased risk for children not attending school. This pattern is similar to previous episodes of social isolation associated with pandemics (Usher et al., 2020).

Children's exposure to domestic violence, whether directly witnessed or overheard, is harmful and may lead to posttraumatic stress disorder and other severe emotional and behavioral difficulties (Ravi & Casolaro, 2018). Further, intimate partner violence and child abuse often co-occur, and it is probable that children will experience an increased risk of maltreatment when isolated at home (SAMHSA, 2021). Family violence during pandemics is also associated with a range of factors, including economic stress, disaster-related instability, increased exposure to exploitative relationships, and reduced options for support (Peterman et al., 2020). In comparison to natural disasters, the current crisis features similar scenarios of rapidly rising stress, abrupt disruptions in daily routines, the closure of schools and community facilities, and a rapid reduction in available resources following natural catastrophes (Campbell, 2020). In order to address the seriousness of this challenge, new recommendations were developed by the American Academy of Pediatrics and different health agencies in different countries for more supports to be put in place to help children at risk of abuse (Humphreys et al., 2020).

At the local level, it was found that child abuse is, unfortunately, still a problem in Saudi Arabia, and its prevalence is a cause of concern, both for the government and healthcare agencies (Ghaffar et al., 2018). There were reports stating that the incidents reported were much fewer than actual occurrences, primarily due to either the victims' difficulty to recall violent events and their willingness to disclose the event or the insensitivity of the investigating agencies (Al-Eissa et al., 2015). However, the prevalence of physical abuse, sexual abuse, and neglect in reported studies were 70%, 15%, and 15%, respectively (Mogaddam & Kamal, 2015). Due to this concern, the Saudi government initiated the National Family Safety Program (NFSP) in 2005 to prevent child abuse and educate the public. While the situation of the COVID-19 pandemic in Saudi Arabia is still unfolding, we are interested in assessing the current situation of child maltreatment and whether this pandemic has created similar new trends of abuse or not. We aim to use NFSP data to assess the rates and types of child maltreatment before and during the pandemic.

2. Methodology

The research team was granted King Saud University's (KSU) IRB approval on July 27, 2020, with Ref. No. 20/0626/IRB to conduct a retrospective review of data from the National Registry of Child Abuse and Neglect Cases via the National Family Safety Program (NFSP), Saudi Arabia. The NFSP is a national program that was established in November 2005. The program serves over 34 million individuals in Saudi Arabia and is administratively linked to the National Guard Health Affairs (NGHA). NFSP has a central electronic record designed and developed by the information and communication technology team. The program mandate is to register and document all suspected cases of child abuse presented to healthcare facilities. Hospitals are required to nominate healthcare workers to attend specialized training by the NFSP. Training ensures proper use of the system and standardized assessments and entries. Following this step, the hospital representative will be granted access with a unique username and password to register cases. NFSP provides ongoing technical support and training to all registered users. Formal approval from the National Guard Health Affairs (NGHA) for anonymized registry access was granted to our research team members based on the IRB approval. However, this program only covers the mandate for hospitals and other clinical settings to report suspected or confirmed cases of abuse. Other reported cases in the community are registered through the Ministry of Human Resources and Social Affairs.

2.1. Measures

NFSP designed and implemented an assessment tool to register cases of abuse in Saudi Arabia after involving key decision-makers (Almuneef et al., 2014).

1. Victim sociodemographic data: the agent will enter the victim's age, gender, and residence. However, the victim's race is not required to be documented. It also covers parents' educational and employment status and whether they live together. Parents' health condition and presence of disability have to be reported as well.
2. Details about the incident and the offender: this section covers information about who reported the case; a family member, victim himself, stranger, or a healthcare worker. Also, more information is provided about the victim's health before the incident, previous exposure to maltreatment, and the presence of chronic illness or disability. Type of maltreatment is documented using a checklist with four different options (sexual, emotional, physical, and neglect). Relationship to the offender has to be identified in this section with more information such as gender, age, marital status, educational level, employment, medical condition, chronic illness, disability, or addiction problems.
3. The victim and perpetrator's economic, social and environmental associated factors: This section allows agents, based on their training and judgment, to choose associated factors from a checklist and is divided into three parts:

Table 1
Descriptive analysis of sociodemographic characteristics of maltreated children.

	Frequency	Percentage
Victim's sex		
Male	700	53.7
Female	604	46.3
Age group		
<1 year	98	7.5
1–3 years	401	30.8
>3–6 years	239	18.3
>6–9 years	185	14.2
10–13 years	250	19.2
>13 years	131	10
Father alive		
No	18	1.4
Yes	1286	98.6
Father's educational level		
Unknown	38	2.9
Illiterate	49	3.8
Primary school level	118	9
Intermediate school level	161	12.3
High school	690	52.9
University degree or higher	248	19
Father's employment		
Unknown	40	3.1
Unemployed	100	7.7
Retired	111	8.5
Private sector	210	16.1
Governmental sector	756	58
Owens business	87	6.7
Mother's alive		
No	15	1.2
Yes	1289	98.8
Mother's educational level		
Unknown	38	2.9
Illiterate	75	5.8
Primary school level	173	13.3
Intermediate school level	190	14.6
High school	542	41.6
University degree or higher	286	21.9
Mother's employment status		
Unknown	37	2.8
Unemployed	15	1.2
Housewife/retired = 1	1075	82.4
Private sector	51	3.9
Governmental sector	118	9
Owens business	8	0.6

- a. Victim's family-related socioeconomic factors: it has details such as high households' size (more than 6 members), parental divorce, social isolation, poor parenting, wrong social beliefs, high crime in the surrounding area, lack of supportive services, poor income, living in a remote area, unaware of the rules and laws.
 - b. Victim-related factors: this includes: excessive crying, chronic illness, a previously neglected child, a prior history of abuse, confirmed disability, behavioral problems, or being an unwanted child.
 - c. Perpetrator's related factors/motives: This covers substance abuse and or addiction, chronic physical illness, living with unemployment, psychological/psychiatric disorders, very young age, living in poverty, ignorance-wrong beliefs about offense and punishment.
4. Hospitalization and final decision: this part aims to assess the final disposition of the case. The agent will document the medical treatment provided and if the victim required pediatric ICU admission or a hospital or emergency room visit. The final disposition plan and referral to either the social protection committee or police are also documented here.

To compare the rates and types of child maltreatment before and during the COVID-19 pandemic in Saudi Arabia, we collected anonymized secondary data for the period of September 2019 to September 2020. Anonymized data was extracted with no exclusion criteria and do not include identifying data, as shown in Table 1. Collected data was inclusive for a total of ($n = 1304$) cases, divided between the period March to September 2019 ($n = 699$) and March to September 2020 ($n = 605$). We conducted a retrospective data review to compare rates and types of child maltreatment six months before and during the COVID-19 pandemic using March 23, 2020, as our landmark when the first national curfew was announced in Saudi Arabia.

3. Analysis

Descriptive analysis with the mean and standard deviation was applied to the continuous variables and the frequencies and percentages for the categorical variables. The multiple response dichotomy analysis was used to describe the prevalence of various types of abuse and associated factors among children due to the presence of overlap exposure to more than one type of abuse among children and various simultaneous risk factors. The bivariate (χ^2 -test) of independence was used to assess the differences between the abused children's categorically measured abuse-related variables and sociodemographic characteristics between the two periods (before the COVID-19 pandemic was announced and during the pandemic), and the unpaired sample t -test was applied to assess the statistical significance of mean differences on continuous variables across the levels of the binary variables. All analyses were performed using SPSS version 24.

4. Results

One thousand three hundred and four child abuse cases (reports) were obtained from the NFSP, 699 cases (53.6%) were reported during 2019, and the remainder of the cases (605, 46.4%) were reported during 2020 when the COVID-19 pandemic was announced. All these children were exposed to various types of maltreatment or combinations of maltreatment types. The resulting data analysis findings for the victims' sociodemographic characteristics are displayed in Table 1. For the whole sample of victims, most of the abused children (53.7%) were males, and the remainder (46.3%) were females. The mean age (years) for the abused children was 6.40 years, SD was 4.88 years, and the age range between the youngest (approximately = 1 month old) and oldest victims reported (17 years old)

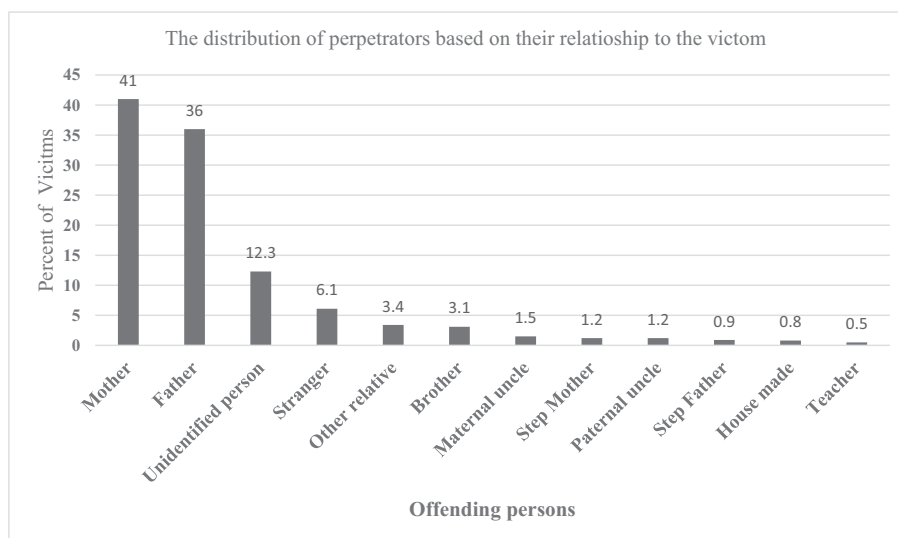


Fig. 1. The distribution of perpetrators based on their relationship to the victim.

was 16.92 years. Most of the perpetrators were known to most, 87.7%, of the victims; however, children were more commonly maltreated by their mothers, followed by fathers, note Fig. 1.

The resulting bivariate analysis findings are displayed in Tables 2, 3, and 4. A chi-squared test of independence suggested that the gender of the abused children did not differ significantly between the two periods (before and during the pandemic) although male children appeared to be slightly more exposed to violence during the pandemic than females. However, the mean age of the abused children during the pandemic period was significantly higher ($M = 7.22$ years) than before the period ($M = 5.69$ years). Additionally, children aged >13 years and those aged 10–13 years were significantly more exposed to violence during the pandemic than others. On the contrary, infants, toddlers, and preschoolers were significantly less exposed to violence than others. Children residing with a single parent were found to be significantly more exposed to violence during the pandemic compared with those living with both parents and other relatives. Losing a father or a mother did not converge significantly on children's exposure to violence during the two periods and

Table 2Descriptive analysis of victims' sociodemographic characteristics before and during the COVID-19 pandemic $N = 1304$.

	Time of incident		Test statistic	P-value
	Before (COVID) n = 699	During (COVID) n = 605		
Victim's sex				
Male	361 (51.6)	339 (56)	$\chi^2(1) = 2.51$	0.113
Female	338 (48.4)	266 (44)		
Victim's age (years), mean (SD)	5.69 (4.91)	7.22 (4.71)	$t(1302) = 5.7$	<0.001
Age group				
<1 year	71 (10.2)	27 (4.5)	$\chi^2(5) = 51.61$	<0.001
1–3 years	257 (36.8)	144 (23.8)		
>3–6 years	113 (16.2)	126 (20.8)		
>6–9 years	88 (12.6)	97 (16)		
10–13 years	107 (15.3)	143 (23.6)		
>13 years	63 (9)	68 (23.6)		
Victim lives with				
Both parents	528 (75.5)	293 (48.4)	$\chi^2(2) = 115.33$	<0.001
Other caregivers/relatives	33 (4.7)	24 (4)		
Single parent	138 (19.7)	288 (47.6)		
Father alive				
No	10 (1.4)	8 (1.3)	$\chi^2(2) = 0.03$	0.867
Yes	689 (98.9)	597 (98.7)		
Father's educational level				
Unknown	20 (2.9)	18 (3)	$\chi^2(5) = 33.99$	<0.001
Illiterate	20 (2.9)	29 (4.8)		
Primary school level	45 (6.4)	73 (12.1)		
Intermediate school level	94 (13.4)	67 (11.1)		
High school	410 (58.7)	280 (46.3)		
University degree or higher	110 (15.7)	138 (22.8)		
Father's employment				
Unknown	21 (3)	19 (3.1)	$\chi^2(5) = 58.64$	<0.001
Unemployed	36 (5.2)	64 (10.6)		
Retired	59 (8.4)	52 (8.6)		
Private sector	79 (11.3)	131 (21.7)		
Governmental sector	467 (66.87)	289 (47.8)		
Owens business	37 (5.3)	50 (8.3)		
Mother's alive				
No	8 (1.1)	7 (1.2)	$\chi^2(1) = 0.0001$	0.983
Yes	691 (98.9)	598 (98.8)		
Mother's educational level				
Unknown	19 (2.7)	19 (3.1)	$\chi^2(5) = 48.5$	<0.001
Illiterate	33 (4.7)	42 (6.9)		
Primary school level	109 (15.6)	64 (10.6)		
Intermediate school level	88 (12.6)	102 (16.9)		
High school	335 (47.9)	207 (34.2)		
University degree or higher	115 (16.5)	171 (28.3)		
Mother's employment status				
Unknown	19 (2.7)	18 (3)	$\chi^2(5) = 19.04$	0.002
Unemployed	11 (1.6)	4 (0.7)		
Housewife/retired = 1	596 (85.3)	479 (79.2)		
Private sector	19 (2.7)	32 (5.3)		
Governmental sector	53 (7.6)	65 (10.7)		
Owens business	1 (0.1)	7 (1.2)		

Table 3
Maltreatment types and related factors before and during the COVID-19 pandemic N = 1304

	Before (COVID) n = 699	During (COVID) n = 605	Test statistic	P-value
Reporting persons				
A stranger person	4 (0.6)	7 (1.2)	$\chi^2(1) = 1.33$	0.250
A family member	244 (34.9)	364 (60.2)	$\chi^2(1) = 83.14$	<0.001
The affected victim themselves	41 (5.9)	18 (3)	$\chi^2(1) = 6.27$	0.012
A healthcare worker	439 (62.8)	227 (37.5)	$\chi^2(1) = 82.96$	<0.001
Possibility of maltreatment				
Unsubstantiated cases	133 (19)	271 (44.8)	$\chi^2(1) = 100.95$	<0.001
Substantiated cases	566 (81)	334 (55.2)		
Previous exposure to maltreatment				
No	484 (69.2)	494 (81.7)	$\chi^2(1) = 26.64$	<0.001
Yes	215 (30.8)	111 (18.3)		
Type of previous maltreatment				
Neglect	113 (16.2)	63 (10.4)	$\chi^2(1) = 9.19$	0.002
Emotional abuse	32 (4.6)	27 (4.5)	$\chi^2(1) = 0.01$	0.921
Physical abuse	107 (15.3)	49 (8.1)	$\chi^2(1) = 16$	<0.001
Sexual abuse	14 (2)	12 (2)	$\chi^2(1) = 0.001$	0.98
Other types	2 (0.3)	0	$\chi^2(1) = 0.40$	0.544
Type of current maltreatment				
Sexual abuse	49 (7)	116 (19.2)	$\chi^2(1) = 43.41$	<0.001
Emotional abuse	80 (11.4)	195 (32.2)	$\chi^2(1) = 84.2$	<0.001
Physical abuse	375 (53.6)	166 (27.4)	$\chi^2(1) = 91.80$	<0.001
Neglect	343 (49.1)	238 (39.3)	$\chi^2(1) = 12.43$	<0.001
Other = maltreatment	17 (2.4)	2 (0.3)	$\chi^2(1) = 9.98$	0.002
Mean Number of maltreatment types	1.24 (0.52)	1.19 (0.51)	$t(1281.14) = 1.78$	0.075
Is perpetrator known				
No	66 (9.4)	94 (15.5)	$\chi^2(1) = 11.19$	0.001
Yes	633 (90.6)	511 (84.5)		
Offender persons				
Unidentified person	66 (9.4)	94 (15.5)	$\chi^2(1) = 11.19$	0.001
Step mother	10 (1.4)	6 (1)	$\chi^2(1) = 0.52$	0.473
Step father	5 (0.7)	7 (1.2)	$\chi^2(1) = 0.70$	0.405
Brother	22 (3.1)	18 (3)	$\chi^2(1) = 0.032$	0.857
Maternal uncle	10 (1.4)	10 (1.7)	$\chi^2(1) = 0.11$	0.745
Paternal uncle	3 (0.4)	13 (2.1)	$\chi^2(1) = 7.91$	0.005
Other relative	14 (2)	30 (5)	$\chi^2(1) = 8.70$	0.003
Stranger	36 (5.2)	44 (7.3)	$\chi^2(1) = 2.54$	0.111
Housemaid	8 (1.1)	2 (0.3)	$\chi^2(1) = 1.86$	0.173
Teacher	4 (0.6)	2 (0.3)	$\chi^2(1) = 0.054$	0.816
Mother	360 (51.5)	174 (28.8)	$\chi^2(1) = 69.4$	<0.001
Father	262 (37.5)	208 (34.4)	$\chi^2(1) = 1.35$	0.245
Offender's sex				
Female	305 (43.6)	199 (32.9)	$\chi^2(3) = 124.62$	<0.001
Male	227 (32.5)	308 (50.9)		
Both male and female	100 (14.3)	3 (0.5)		
Unknown	67 (9.6)	95 (15.7)		
Offender's age group				
≤18 years	33 (5.5)	29 (6)	$\chi^2(5) = 35.9$	<0.001
19–30 years	242 (40.5)	137 (28.1)		
31–40 years	209 (34.9)	163 (33.5)		
41–50 years	78 (13)	126 (25.9)		
51–60 years	29 (4.8)	24 (4.9)		
>60 years	7 (1.2)	8 (1.6)		
Offender's employment				
Both parents involved in offense	100 (16.3)	3 (0.6)	$\chi^2(6) = 108.8$	<0.001
Unemployed/student	58 (9.4)	76 (16.1)		
Retired	30 (4.9)	21 (4.4)		
Housewife	254 (41.2)	161 (34)		
Private sector employed	43 (7)	60 (12.7)		
Governmental employed	9 (1.30)	128 (27.1)		
Owns business	123 (19.9)	24 (5.1)		
Offender's medical condition				
Healthy	533 (90.8)	415 (90.2)	$\chi^2(2) = 1.96$	0.375
With chronic illness/disability	25 (4.3)	27 (5.9)		
Known for addiction/substance use	29 (4.9)	18 (3.9)		

did not differ significantly between the groups of children exposed to violence in the two periods, $p = 0.867$ and $p = 0.983$, respectively.

Additionally, results showed that paternal educational levels differed significantly between the two periods; violence was significantly more prevalent during the pandemic among the children of university-educated and primary educated fathers. Additionally, the father's employment status differed significantly among victimized children between the two years. Violence was found to be significantly more prevalent among children of an unemployed father working in the private sector and those of business owners during the pandemic. However, mothers' education levels differed: violence was found to be significantly more prevalent among children of university-educated mothers and those of intermediate-level-educated mothers during the pandemic time. In addition, maternal employment differed between the two samples, as violence among children of homemakers was significantly less prevalent in the pandemic year. This was also the case with children of private, government, and self-employed mothers. The general health of the abused children differed significantly between the two samples, however, chronic illness was found to be significantly less prevalent during the pandemic.

Table 2 shows significant changes in abuse characteristics observed during COVID-19 ($n = 605$) compared with before ($n = 699$). The mean number of abuses differed slightly between the two samples of abused children. The mean number of abuses per child was slightly—though not significantly—lower during the pandemic ($M = 1.19$) than before ($M = 1.24$, $p = 0.075$) (Table 2).

During COVID-19, abuse was significantly more often reported by a family member than by the victims themselves or a healthcare worker|. These reports were less likely to be preceded by reports of previous abuse and be reported as unsubstantiated cases rather than substantiated cases. In contrast to before COVID-19, the offender was less often reported to be known to the victim; was both parents or the mother but was more often described as male, elder, single, less educated; and currently unemployed with no significant change observed in their health status ($p < 0.001$). The Majority of cases were picked up by healthcare workers before COVID-19 (62.8%) and by family members reporting during COVID-19 (60.2%). The substantiated cases of child maltreatment were more before COVID-19

Table 4

Offender's and victim's social and environmental risk factors before and during the COVID-19 pandemic N = 1304.

	Before (COVID) n = 699	During (COVID) n = 605	Test statistic	P-value
Victims' households' socioeconomic index, mean (SD)	-0.0142 (0.97)	0.020 (1.04)	t(1302) = 0.55	0.582
Victims' family-related factors				
High household size >6 members	64 (9.2)	58 (9.6)	$\chi^2(1) = 0.10$	0.790
Parental divorce	112 (16)	179 (29.6)	$\chi^2(1) = 34.42$	<0.001
Other family-related problems	196 (28)	97 (16)	$\chi^2(1) = 26.84$	<0.001
Social isolation	33 (4.7)	35 (5.8)	$\chi^2(1) = 0.74$	0.389
Poor parenting	377 (53.9)	368 (60.8)	$\chi^2(1) = 6.30$	0.012
Victims' environmental factors				
Wrong social beliefs	386 (55.2)	410 (67.8)	$\chi^2(1) = 21.5$	<0.001
High crime in the surrounding area	5 (0.7)	2 (0.3)	$\chi^2(1) = 0.323$	0.57
Lack of supportive services	28 (4)	7 (1.2)	$\chi^2(1) = 10.1$	0.002
Poor income	90 (12.9)	45 (7.4)	$\chi^2(1) = 10.3$	0.001
Living in a remote area	18 (2.6)	6 (1)	$\chi^2(1) = 4.5$	0.034
Unaware of the rules and laws	276 (39.5)	195 (32.2)	$\chi^2(1) = 7.4$	0.007
Other environment-related factors	197 (28.2)	109 (18)	$\chi^2(1) = 18.70$	<0.001
Victim's related/associated factors, n = 1291				
Other child-related factors	244 (34.9)	148 (24.5)	$\chi^2(1) = 16.83$	<0.001
Excessive crying	16 (2.3)	11 (1.8)	$\chi^2(1) = 0.40$	0.552
Child with chronic illness	56 (8)	31 (5.1)	$\chi^2(1) = 4.34$	0.037
Previously neglected child	335 (47.9)	208 (34.4)	$\chi^2(1) = 24.50$	<0.001
Previously harmed	335 (47.9)	0	$\chi^2(1) = 390.2$	<0.001
A disabled child	14 (2)	12 (2)	$\chi^2(1) = 0.001$	0.98
Child with behavioral problems	58 (8.3)	231 (38.2)	$\chi^2(1) = 167.9$	<0.001
An unwanted child	15 (2.1)	11 (1.8)	$\chi^2(1) = 0.178$	0.673
A premature child	1 (0.1)	206 (34)	$\chi^2(1) = 207.9$	<0.001
Perpetuator's related factors, n = 1296				
Substance abuse/addiction	34 (4.90)	26 (4.3)	$\chi^2(1) = 0.24$	0.626
Chronic physical illness	10 (1.4)	12 (2)	$\chi^2(1) = 0.60$	0.439
Other factors	205 (29.4)	145 (24)	$\chi^2(1) = 4.82$	0.028
Living with unemployment	6 (0.9)	28 (4.6)	$\chi^2(1) = 18.15$	<0.001
Psychological/psychiatric disorders	78 (11.2)	45 (7.4)	$\chi^2(1) = 5.30$	0.022
Very young age	48 (6.9)	47 (7.8)	$\chi^2(1) = 0.40$	0.532
Living in poverty	20 (2.9)	9 (1.5)	$\chi^2(1) = 2.81$	0.093
wrong beliefs about offense and use of punishment	371 (53.1)	400 (66.1)	$\chi^2(1) = 22.82$	<0.001
Final disposition plan				
Referred to social protection committee	404 (57.8)	500 (82.6)	$\chi^2(1) = 94.16$	<0.001
Referred to police and law enforcement	145 (20.7)	178 (29.4)	$\chi^2(1) = 13.11$	<0.001
Referred for other services	303 (43.3)	29 (4.8)	$\chi^2(1) = 254.01$	<0.001
Required further medical assessment	2 (0.3)	10 (1.7)	$\chi^2(1) = 6.64$	0.010

(80% vs 51.2%). Having a history of previous exposure to maltreatment was more frequent before the COVID-19 era, while neglect and physical abuse were the most common types in both periods. There was a marked increase in emotional and sexual types of abuse during the COVID-19 era (32, 19%, vs 11.4, 7%). Physical maltreatment and neglect types were less common during the COVID-19 era (53.6, 49.1 vs 27.4, 39.3). The mother being reported as the offending person was much less during the COVID-19 period (28.8 vs 51.5%) (Table 3).

We compared the offender's and the victim's social and environmental factors both before and during the COVID-19 pandemic. As for the victim's related factors, we found that the percentage of parental divorce was higher in the post-pandemic period, which was 29.6%, compared with the pre-pandemic period, which was 16% with a *P*-value of <0.001. Wrong social beliefs among families increased from 55.2% before the pandemic to 67.8% during the pandemic, with a *P*-value of <0.001. On the other hand, the lack of supportive services improved from 4% before the pandemic to only 1.2% during the pandemic. Interestingly, 12.9% of the families had poor income before the pandemic compared with 7.4% in the post-pandemic period, so the income has improved in reported cases during the pandemic. 39.5% of families were unaware of the rules and laws before the pandemic, but the percentage decreased to 32.2% during the pandemic (Table 4).

Our study found that 47.9% of the pre-pandemic victims were previously neglected compared with 34.4 victims in the post-pandemic period and 47.9% were previously harmed compared with 0% in the post-pandemic period. 8.3% of the victims had some behavioral problems in the pre-pandemic period compared with 38.2% in the post-pandemic period which may be attributed to staying at home more often than before the pandemic period and being around children all the time. 0.1% of the victims in the reported cases before the pandemic were premature children compared with 34% during the pandemic. On the other hand, 0.9% of perpetrators were unemployed before the pandemic compared with 4.6% during the pandemic which may be related to the pandemic's effect on the economy and the resulting loss of jobs.

Our study found that ignorance and wrong beliefs about this offense and the excessive use of punishment among families of victims increased during the pandemic to 66.1% compared with 53.1% before the pandemic. Some of the reported cases required referral to child protection services. Referral to the social protection committee and the police and law enforcement increased to 82.8% and 29.4%, respectively, during the pandemic compared with 57.8% and 20.7% before the pandemic.

5. Discussion

Our findings are consistent with previously reported increased risk of psychological stress, risk of family violence, and report of abuse during this pandemic associated with social curfew measures and social isolations (Oecd.org, 2021). These increases may indicate greater exposure to the risk of abuse due to less access to support channels by victims through healthcare facilities. Instituted confinement measures, lockdowns, and stay-at-home orders increased family stress and negatively affected the protective systems in place for reporting and responding to such crises (Unsdg.un.org, 2021). Any or all of these factors can increase the risk of harm to children who might already be trapped in abusive and neglectful situations. However, these new stresses are occurring at a time when children are less visible to individuals and professionals who are normally engaged in their protection, and child and family welfare services are over-stretched and disrupted (Unicef.org, 2021a,b). Our findings converge towards a similar theme, as indicated by the increased number of reported cases of abuse by both parents. They are consistent with the globally reported increased risk of intra-familial psychosocial risk (Cappa & Jijon, 2021). These include an increased risk of parental stress and intimate family violence in a confined family environment in which children are increasingly vulnerable. Our findings in Saudi Arabia may point to a pattern of more exposure to the risk of abuse, with less access to formal or informal protection or support systems, especially those related to healthcare systems or facilities (Pereda & Díaz-Faes, 2020). Our study confirmed parental divorce as a risk factor, especially during the pandemic; it is also mentioned as a risk factor for abuse in the literature (Muldoon et al., 2021).

During the COVID-19 pandemic, official reports to child protection services declined across the United States by 20%–70%, probably due to social distancing and decreased in-person contact between children and authorized reporters (e.g., physicians, teachers, and social workers) (Welch & Haskins, 2020). However, our findings showed a non-significant decrease in reported cases during the pandemic. Furthermore, we noticed a significant difference with more referrals to social services and law enforcement. Previous research supports the need to consider sociodemographic risk factors associated with child maltreatment to guide treatment and preventive measures (Carbone et al., 2021). In our study we found that males were slightly more exposed to violence during the pandemic in 2020. In terms of the interaction of type of abuse and sociodemographic factors, in the United States, children experiencing physical child abuse were less likely to be from higher-income groups and less likely to be female. Further studies from other countries are warranted to assess the changing sociodemographic risk factors during the pandemic.

Another recognized risk factor for child victimization is being younger than four years of age (CDC, 2021). While previously, older children and adolescents were often excluded from child abuse research, our study showed that the mean age of abused children during the pandemic was significantly higher (7.2 vs 5.7 years) (Michaels & Letson, 2021). Furthermore, the national US data showed significant increases in the percentage of emergency department visits related to suspected abuse and ending in hospitalization across all age groups. Children aged 0–4 years increased from 3.5% in 2019 to 5.3% in 2020; school-aged children 5–11 years from 0.7% in 2019 to 1.3% in 2020; and adolescents 12–17 years from 1.6% in 2019 to 2.2% in 2020 (Swedo et al., 2019).

Wong et al. (2021) reported that having difficulty discussing COVID-19 with children was significantly associated with more physical abuse, whereas having more confidence in handling preventive COVID-19 attitudes with children was negatively associated with physical punishment and very severe physical assaults.

A study from Hong Kong explored the impact of income reduction and job loss among 600 parents. The researchers found that income reduction or job loss was significantly associated with severe physical assaults towards children. Nevertheless, income

reduction and job loss were significantly associated with less psychological aggression (Wong et al., 2021). On the other hand, Lawson et al. (2021) reported that parents who lost their jobs were more likely to psychologically maltreat their children during the pandemic.

Children with special needs—disabilities, mental health issues, and chronic physical illnesses—may increase caregiver burden (CDC, 2021). Furthermore, children with attention-deficit hyperactivity disorder (ADHD) and a conduct disorder were reported to be more likely to become physical abuse victims. Furthermore, sex-stratified analyses showed that a higher rate of physical abuse among children with ADHD was driven by the male subsample, while the female subsample drove higher rates of abuse for those with conduct disorders (Carbone et al., 2021). Our study showed an increased rate of parental divorce during the pandemic, which is mentioned as a risk factor for abuse in the literature (Lawson et al., 2021). Other studies suggest that a lack of supportive services and living in a rural or urban area, can be a risk factor for child abuse and neglect (Almazeedi et al., 2020).

The literature shows that those wrong social beliefs related to cultural differences may be a risk factor for abuse. For example, high levels of corporal punishment were reported in South African youth which were similar to our results (Meinck et al., 2015). In our study, wrong beliefs towards punishment increased during the pandemic, which was reported to be a risk factor for physical abuse by a study conducted in Nepal (Lawson et al., 2021). Furthermore, we think there are other specific social beliefs of the Saudi culture that first-degree relatives are often involved in parenting and might also use physical punishment. However, it is unclear if COVID-19 pandemic did increase levels of corporal punishment.

Published studies mentioned that the pandemic has resulted in a huge financial burden on families causing an insufficient income. The present study found that the offenders' unemployment rate was higher during the pandemic than the period before. This is similar to the other published data, as parental job loss has been found as a major contributor to future psychological and physical violence (Conrad-Hiebner & Byram, 2018). However, our findings interestingly showed that victims' families that had a high income were more likely to abuse their children during the pandemic (Dubey et al., 2020; Xu et al., 2019). We think these findings can be explained by the Saudi government's financial stimulus program, which was implemented early in the lockdown phase and covered both public and private sector employees.

Published studies show that children who were previously abused or harmed were more likely to be abused again during the pandemic (Cusinato et al., 2020). Increase in behavioral problems among victims during the COVID-19 pandemic is similar to other published data, as parental stress and pressure can cause children to have less patience. Furthermore, the children and adolescents who experience trauma are more likely to exhibit behavioral issues (Stensrud et al., 2018).

In contrast to our study, published paper in the United Kingdom found that there was a decrease in referrals to child protection services during the pandemic period compared with the period before the pandemic. However, in our study, we found an increase in referrals during the pandemic compared with the period before (Garstang et al., 2020). This could be explained by the fact that NFSP is a hospital-based program and might not reflect what is happening at the community level.

6. Conclusion

The findings of this data review show a similar trend in child maltreatment cases reported during the pandemic. Although the number of cases of abuse is decreasing, evidence suggests that the risk factors for abuse have increased dramatically. Our study suggested a notable association between the occurrence of public health crises, maintained rates of abuse, and changes in several sociodemographic risk factors related to child/family characteristics and offenders. Given the devastating effects of maltreatment on children, both in the short and long term and society as a whole, it is critical to reevaluate how the COVID-19 pandemic has affected children. Screening and implementation of proactive tools might facilitate the earlier identification of children at risk.

7. Limitations

Data obtained from NFSP are limited to cases presented to the healthcare system. The ministry of social affairs has another community surveillance system and registry at the community level. Thus, our findings could explain part of the picture and could partially assess the impact of the COVID-19 pandemic on child maltreatment in the Saudi Culture.

8. Recommendations

To develop proactive tools to screen for child maltreatment, especially in times of public crisis. The current NFSP focuses on cases presented to hospitals and other clinical settings. More data integration is needed with collaboration among governmental agencies to strengthen the management of maltreatment cases in the community.

Declaration of competing interest

None declared.

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