

# Prevalence of Child Maltreatment during the COVID-19 Pandemic: A Cross-sectional Survey of Rural Hubei, China

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## Abstract

The impact of lockdown measures in Wuhan, China during the coronavirus disease 2019 pandemic on child maltreatment remains unknown. The present study attempted to estimate the prevalence of child maltreatment during this period, to identify risk factors, and the influence of child maltreatment. A representative sample of 1,062 school-aged children in rural Hubei province was surveyed. Results indicated that the prevalence of family violence, physical violence, emotional abuse and neglect during the lockdown period were 13.9, 13.7, 20.2 and 7.3 percent, respectively, and that of lifetime prevalence were 17.0, 13.9, 14.6 and 6.9 percent, respectively. And most victims did not seek official help. Boys were more likely to experience physical violence. Children from separated/divorced families tended to report more emotional abuse. Those having family members with a history of drug abuse and mental illness were more likely to experience neglect during the lockdown period. All types of child maltreatment were positively associated with self-harm behaviours. These findings highlight the importance of identifying at-risk children immediately and implementing timely intervention programmes to prevent self-harm behaviours for social workers and health professionals.

**Keywords:** Child maltreatment, COVID-19, rural Hubei self-harm behaviours

*Accepted: July 2021*

## Introduction

The outbreak of the coronavirus disease 2019 (COVID-19) has had a profound impact on global health and human relationships. The vulnerability of some at-risk groups—such as children and other dependent groups—has been intensified; ‘safer-at-home’ is decidedly unsafe for a large proportion of the population, as instances of domestic violence and abuse have increased (Kofman and Garfin, 2020). Lockdown measures and an increased global economic recession are fueling tensions within families, and children are both victims of and witnesses to domestic violence and abuse (United Nations, 2020). Some studies show that the number of domestic violence cases have increased in Spain and in the UK by 20 and 25 percent respectively during the COVID-19 pandemic (Kofman and Garfin, 2020; Sharma and Borah, 2020). Furthermore, one study has shown an increase in the proportion of traumatic injuries caused by physical child abuse at Johns Hopkins Children’s Center during the pandemic (Kovler *et al.*, 2021). UNICEF (2020) declared that the risk factors for violence and abuse against children living with restricted movement and socioeconomic decline are increasing, especially as they become cut off from teachers, social service workers and other key sources of support. The issue of the maltreatment of children needs to be addressed urgently, particularly in areas that are hard hit by the pandemic.

Hubei province was one of the areas in China most affected by the COVID-19 pandemic, and strict lockdown measures in Wuhan and surrounding areas were taken from 23 January 2020 to 8 April 2020 to curb the spread of the virus. The economic downturn and strict confinement measures had numerous negative impacts on families. An anti-domestic violence charity in one county of Hubei province recorded 175 cases of domestic violence in February 2020, more than three times as many as during the same period in 2019 (Cao, 2020).

However, there is, to date, no Chinese study that examines the prevalence of child maltreatment and related risk factors to identify the characteristics of vulnerable children suffering from maltreatment during the COVID-19 pandemic.

## Social vulnerability theory

The conceptual framework used for this study is the social vulnerability theory. Social vulnerability refers to the inability of people, organisations and societies to withstand adverse impacts from multiple stressors (e.g. abuse, social exclusion and natural hazards) to which they are exposed (Warner, 2007). The pre-disaster vulnerability factors, like characteristics of the child, the abuser and the family environment (family structure,

social status, etc.), play a role in causing child maltreatment (Finkelhor *et al.*, 2013; Ajdukovic *et al.*, 2018; Wan *et al.*, 2020). Just as Cutter and Emrich (2006) pointed out social vulnerability is the susceptibility of social groups to the impacts of hazards, as well as their resiliency, or the ability to adequately recover from them. So, this study will examine in details the impacts of the pre-disaster factors on child maltreatment.

## Risk factors of child maltreatment

Risk factors for the maltreatment of children at individual and household levels have been identified by previous studies, which include gender, socioeconomic level, family structure and parents' characteristics (Vial *et al.*, 2020; Tran *et al.*, 2021).

At the individual level, several studies show gender differences in different types of child abuse (Kumar *et al.*, 2017; Salem *et al.*, 2020); however, there has been no consistent conclusion internationally. Many studies found boys were more likely to experience physical abuse, compared with girls, and that a higher prevalence of neglect is observed among girls than boys (Cui and Liu, 2020; Wan *et al.*, 2020). However, other studies found that boys were more likely to report being victims of emotional abuse and neglect than girls (Li *et al.*, 2012), and there were also some studies reporting that there is no evidence of gender difference in associations (Stoltenborgh *et al.*, 2012).

Previous meta-analyses show that family factors are strong predictors of child maltreatment (Logan and Semanchin, 2018; Mulder *et al.*, 2018). Poverty has been shown to be significantly related to child maltreatment and the relationship is still strong (Berger and Waldfogel, 2011; Drake and Jonson-Reid, 2013; Pelton, 2015; Yang, 2015). The COVID-19 outbreak acts as a catalyst for a considerable rise in child maltreatment by exacerbating household poverty, and studies have shown that unemployment during the epidemic, family income instability and consequent poverty are the important risk factors for child maltreatment (Lawson *et al.*, 2020; Lee *et al.*, 2021; Wong *et al.*, 2021). In 2020, the widespread economic downturn and income decrease pushed more disadvantaged families under greater financial and parenting pressure. Therefore, greater insecurity and uncertainty may increase domestic violence, including child abuse (Babvey *et al.*, 2021).

Many studies have also found that a single-parent household is a risk factor for child maltreatment (Girardet *et al.*, 2016; Wan and Luan, 2018). In substantiated cases of neglect, single-parent homes have been shown to have the highest prevalence among those at risk of it (Afifi *et al.*, 2015). Specifically, in rural China, a single-parent household is also a predictor of child maltreatment (Wan *et al.*, 2020). Single parenthood may put strain on a family's financial resources, leading to more

work hours for the parent. This, in turn, limits time to care for the children, increasing the risk of maltreatment, especially neglect (Berger, 2004). Single-parent families face not only greater financial pressure but also the burden of care and education, due to the closure of schools during the outbreak (Babvey *et al.*, 2021). This may also contribute to child maltreatment.

Other parent characteristics such as psychiatric illness or suicide history, family members' drug abuse history and low educational attainment have also been linked to child maltreatment. One study showed that parental depression is a significant predictor of whether parents physically abused their children during the pandemic (Lawson *et al.*, 2020), while Wong *et al.* (2021) found that neither parental depression nor anxiety in pandemic are risk factors for child maltreatment. The reasons for this discrepancy need to be further explored. Although drug abuse has been consistently shown to be related to all forms of aggression and violence, including intimate partner violence (Cafferky *et al.*, 2018) and child abuse (Stith *et al.*, 2009), however, how does it relate to Chinese children need to be further explored. Besides, a study conducted during the pandemic showed no correlation between parental education and child maltreatment (both physical abuse and emotional neglect) (Lee *et al.*, 2021), which is inconsistent with previous findings (Wan *et al.*, 2020). Therefore, more studies are needed to verify their relationship.

Given the conflicting conclusion and insufficient evidence, further research is needed to assess predictors of child maltreatment during the pandemic. This study is particularly important to help social service workers to timely identify risk targets in the child population.

## Consequences of child maltreatment

During the pandemic, children's experience of witnessing violence between parents may also harm them. Considering that childhood is a crucial and sensitive time, the experience of witnessing family violence may have negative consequences on their mental health. Child abuse has been linked to physical, social, cognitive and psychological problems in adulthood (McNeal and Amato, 1998; Adams, 2006; Adhia *et al.*, 2019). Substantial evidence has shown that violence against children is positively associated with their suffering from post-traumatic stress disorder, depression, anxiety and low levels of self-esteem and self-efficacy (Carrilho *et al.*, 2019; Haj-Yahia *et al.*, 2019).

Violence against children is also closely associated with self-harm behaviours. One study conducted in the UK revealed that participants who suffered domestic assault were more likely to present with self-harm behaviours than others (Boyle *et al.*, 2006). Furthermore, individuals with a history of childhood maltreatment may be more likely to have

been exposed to intimate partner violence as well; this, in turn, increases the possibility of them engaging in self-harm (Caron *et al.*, 2018). Experiencing family violence can also cause mental illness, such as depression and post-traumatic stress disorder, which are also positively related to self-harm behaviours.

## The present study

To the best of our knowledge, there is currently no empirical research on the maltreatment of children during the COVID-19 pandemic in rural China, especially in Hubei province. The present study, therefore, aims to examine the prevalence of the maltreatment of children in rural Hubei province during the lockdown period and to determine the associated risk factors for child maltreatment. We also determine the characteristics of vulnerable children subject to violence and their help-seeking behaviours. Finally, we explore the consequences of child maltreatment during the lockdown period. We hope that this study will provide first-hand evidence of the maltreatment of children in rural China during the pandemic that will assist social service providers in identifying vulnerable children and designing as well as implementing timely prevention and intervention measures for victims of child abuse and neglect.

## Methods

### Participants and procedures

The data used in this study are from our survey on the maltreatment of children performed in rural Hubei province in July 2020. Multi-stage sampling methods were used to select a representative sample of school-aged children aged twelve to sixteen years in rural Hubei province. First, six cities were randomly selected: Wuhan, Huanggang, Xianning, Xiaogan, Ezhou and Huangshi cities. Secondly, considering the cities' sizes, 600 rural households were selected from Wuhan and 180 rural households per city were selected from the other five. A total of 1,500 eligible households were surveyed. Finally, one child was randomly selected from each household to answer the questionnaire. Before the survey, a pilot survey of twenty rural adolescents in Hubei province was conducted to identify ambiguity problems and to refine the format of the questionnaire. The questionnaire was then sent to eligible children by one experienced local interviewer using mobile communication. Informed consent was obtained from the children and their caregivers before they started the survey, and the children were

told that they were allowed to withdraw from the survey at any time and skip any questions if they felt uncomfortable. Completing the questionnaire took about thirty minutes. This study was carried out in accordance with the Declaration of Helsinki and approved by the research ethics committee of the first author's affiliate university.

## Measures

### *Violence against children*

All items in the present survey are taken from the Violence against Children Survey (UNICEF, 2012a, 2012b), which has been back-translated into Chinese by Beijing Normal University and widely used in the rural Chinese context (Zhang, 2020). This survey includes questions that address the frequency of experiencing and of witnessing family violence, physical and emotional abuse and neglect during the lockdown period and during their lifetime, which was referring to their whole life before the lockdown. The instrument asked questions that were similar to those asked in previous studies (UNICEF, 2012a, 2012b; Flynn-O'Brien *et al.*, 2016). Sexual abuse was not included in this survey, considering the cultural sensitivity of the questions and respondents' ambiguity in interpreting them.

Two types of family violence were specified: (1) Parents committing physical violence or emotional abuse against each other and (2) Parents committing physical violence or emotional abuse towards the children's siblings. The reliability of this scale was 0.82 in this study.

Four types of physical violence perpetrated by parents or other primary caregivers were illustrated: (1) punching, kicking, whipping or beating; (2) choking, smothering or trying to drown you; (3) burning or scalding intentionally; or (4) using or threatening to use a knife or other weapon against you. The reliability of this scale was 0.90 in this study.

Four types of emotional abuse were included: (1) being told you are not loved or worthless; (2) parents saying that you should not have been born; (3) being insulted or humiliated in front of others; and (4) being ignored for a long time. The reliability of this scale was 0.85 in this study.

Five types of neglect were listed: (1) feeling that you are not important to your parents; (2) feeling that you are not loved; (3) not being provided with food when your home can afford food; (4) not being provided with medical intervention when you are ill; and (5) not being allowed to go to school when your family can afford it. The reliability of this scale was 0.83 in this study.

One question about injuries sustained was asked for physical violence with a yes/no response choice: 'Were you injured due to any physical violence during the COVID-19 lockdown?'

### *Help-seeking behaviours*

Three help-seeking behaviour questions were asked: (1) Did you know there were agencies that could assist victims? (e.g. hospitals, police station, hotlines, centre for the protection minors or legal aid station); (2) Have you ever attempted to seek help from any of these agencies? and (3) Have you ever told anyone else of your experience of domestic abuse? These questions also offered a binary yes/no response.

### *Self-harm behaviours*

One question was used to determine whether the respondent ever deliberately harmed themselves (e.g. cutting themselves with a knife, burning themselves, punching walls or taking risky drugs). This question also offered a binary yes/no response.

### Data analysis

Data analyses were performed using SPSS 22.0 software. First, the descriptive statistics (including frequency, mean and standard deviation) were performed. Secondly, binary logistic regressions were done to explore the risk factors of violence against victims during the lockdown period and before that period respectively. Thirdly, binary logistic regressions were conducted to examine the associations between different types of violence and self-harm behaviours, while controlling for age and gender. Adjusted odds ratios (ORs) were provided with 95 percent confidence intervals to indicate the odds of children experiencing violence reporting the self-harm behaviour, compared with those without such experience, while controlling for other factors.

### Results

Of the original 1,500 participants, 1,062 children completed the questionnaire. The average age of the respondents was 13.98 years ( $SD = \pm 0.99$ , age range = 12–16 years) and 50.4 percent of the sample were boys. The proportions of Grade 7, 8 and 9 were 32.6, 33.9 and 33.5 percent, respectively. Nearly 85 percent of them had siblings and 3.9 percent reported that they came from a poor family. Their fathers were farm workers (53.0 percent), migrant workers (45.9 percent), unemployed due to physical disability (0.9 percent) or had passed away (0.2 percent).

Table 1 presents the prevalence of the maltreatment of children during the lockdown period and before the lockdown. These results show that 13.9 percent of the participants witnessed family violence, 13.7

**Table 1** Descriptive characteristics of violence against children ( $n = 1,062$ ).

Measurement items	Prevalence during the lockdown (%)	Life-time prevalence before the lockdown (%)	P for trend tests
Family violence witness	<b>13.9</b>	<b>17.0</b>	<b>0.003</b>
Parent violence toward each other	11.2	13.2	
Parent violence toward siblings	4.8	6.1	
Physical violence	<b>13.7</b>	<b>13.9</b>	<b>0.84</b>
Punch, kick, whip or beaten	13.6	13.4	
Choke, smother or try to drown	0.2	0.3	
Burn or scald intentionally	0.0	0	
Use or threaten to use a knife or weapon	0.0	0.4	
Emotional violence	<b>20.2</b>	<b>14.6</b>	<b>0.000</b>
Being not loved or worthless	3.7	1.8	
Should not be born	2.4	1.4	
Being insulted or humiliated	16.4	13.1	
Being ignored	2.1	0.1	
Neglect	<b>7.3</b>	<b>6.9</b>	<b>0.71</b>
Being not important to your parents	5.7	4.1	
Not being loved	4.2	3.2	
Not being given food when your home has enough money and food	4.0	1.6	
Not being sent to hospital when you were ill	0.8	0.5	
Not being allowed to go to school when your family can afford	0.2	0.2	

percent reported being subjected to physical violence, 20.2 percent experienced emotional abuse and 7.3 percent reported neglect during the lockdown period from 23 January 2020 to 8 April 2020. Regarding life-time prevalence, 17.0 percent of the surveyed children reported witnessing family violence, 13.4 percent reported experiencing physical violence, 14.6 percent experienced emotional abuse and 6.9 percent reported neglect before the pandemic. A trend analysis showed that the prevalence of emotional violence during the lockdown period was much higher than that before the lockdown at  $p < 0.001$  level. The prevalence of physical violence and neglect was similar to their lifetime experiences. The prevalence of family violence witness was lower during the lockdown period than that before the lockdown at  $p < 0.01$  level.

As shown in Table 2, during the lockdown period, boys were more likely to experience physical violence than girls ( $OR = 0.50$ ,  $p < 0.01$ ). Children from separated/divorced families were more likely to experience emotional violence than those from intact families ( $OR = 1.70$ ,  $p < 0.05$ ). Children whose family members with drug abuse history ( $OR = 9.22$ ,  $p < 0.01$ ) and mental illness ( $OR = 5.50$ ,  $p < 0.01$ ) were more likely to report neglect than their counterparts. During their lifetime pre-lockdown, children having a better educated father were less likely to report witnessing family violence; however, children whose family members diagnosed with mental illness were more likely to report family



Table 2 Binary logistic regressions of children suffering from different types of violence

Predictors	FVW_ lockdown	FVW_ lifetime	PV_ lockdown	PV_ lifetime	EV_ lockdown	EV_ lifetime	N_ lockdown	N_ lifetime
Age	0.90 (0.74–1.09)	0.90 (0.76–1.07)	0.94 (0.78–1.13)	0.94 (0.77–1.13)	0.93 (0.79–1.08)	0.94 (0.78–1.13)	1.15 (0.90–1.47)	1.25 (0.97–1.60)
Gender								
Boys	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Girls	0.73 (0.50–1.08)	0.71 (0.51–1.00)	0.58** (0.39–0.85)	0.69 (0.47–1.01)	0.87 (0.63–1.19)	0.77 (0.54–1.11)	1.00 (0.62–1.62)	0.74 (0.45–1.22)
Education_Father								
Primary and below	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Junior high school	1.25 (0.56–2.74)	0.44** (0.25–0.78)	1.31 (0.57–3.02)	0.92 (0.44–1.92)	0.91 (0.49–1.67)	3.48* (1.06–11.45)	0.93 (0.40–2.13)	2.12 (0.62–7.22)
Senior high school	1.08 (0.48–2.45)	0.50* (0.28–0.90)	1.60 (0.68–3.73)	1.03 (0.48–2.17)	0.81 (0.43–1.51)	4.71* (1.42–15.56)	0.48 (0.19–1.19)	1.64 (0.46–5.80)
Tertiary education	0.18 (0.02–1.56)	0.18** (0.05–0.67)	1.46 (0.45–4.76)	0.66 (0.19–2.30)	0.56 (0.20–1.60)	4.46* (1.07–18.48)	0.51 (0.10–2.63)	2.65 (0.54–12.85)
Primary caregiver								
Parents	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Grandparents	1.45 (0.95–2.24)	0.94 (0.63–1.40)	1.03 (0.66–1.60)	0.96 (0.62–1.51)	0.76 (0.51–1.12)	0.66 (0.41–1.05)	1.08 (0.62–1.89)	0.72 (0.39–1.34)
Relatives or others	1.77 (0.35–8.80)	0.82 (0.14–4.62)	2.14 (0.42–9.78)	2.68 (0.63–11.31)	2.27 (0.52–9.87)	0.67 (0.08–5.56)	1.90 (0.36–9.88)	–
Parent separated/divorced	1.27 (0.66–2.42)	1.53 (0.89–2.61)	1.60 (0.87–2.93)	1.77* (1.00–3.15)	1.70* (1.01–2.85)	0.97 (0.49–1.92)	1.08 (0.49–2.34)	1.39 (0.62–3.14)
Poverty	1.13 (0.45–2.80)	0.97 (0.42–2.24)	0.74 (0.25–2.14)	0.47 (0.14–1.57)	0.53 (0.20–1.39)	0.75 (0.26–2.18)	1.90 (0.75–4.81)	1.59 (0.54–4.71)
Family members' drug abuse history	–	2.86 (0.60–13.64)	1.08 (0.12–9.39)	2.26 (0.41–12.25)	2.38 (0.50–11.15)	1.49 (0.16–13.27)	9.22** (1.91–44.48)	6.33* (1.08–36.92)
Family members' depression, psychiatric illness or suicide history	1.37 (0.36–5.17)	5.65** (1.97–16.20)	0.33 (0.04–2.71)	1.69 (0.50–5.71)	–	0.95 (0.20–4.45)	5.50** (1.74–17.39)	–
Family members' incarceration history	–	1.59 (0.28–8.81)	–	–	–	–	1.71 (0.19–15.10)	–

Note: FVW = family violence witness, PV = physical violence, EV = emotional violence, N = neglect. The values in brackets were the 95% confidence level.  
 \*p < 0.05,  
 \*\*p < 0.01,  
 \*\*\*p < 0.001.

violence witness (OR = 5.65,  $p < 0.01$ ). Children from separate/divorced family were more likely to report physical violence (OR = 1.77,  $p < 0.05$ ) than those from intact families. Children with better educated fathers were more likely to report emotional violence, and those having family members with drug abuse history were more likely to report neglect (OR = 6.33,  $p < 0.01$ ) than their counterparts.

Among the children who reported experiencing physical violence during the lockdown, only 0.7 percent reported that they were injured; 2.1 percent chose not to answer. Of the respondents, 69 percent knew that there were agencies that assist victims; however, only 1.4 percent once attempted to seek help. Further, only 14.5 percent of the victims of physical violence told someone else of their experience, as depicted in Table 3.

Table 4 presents the ORs of the four separate logistic regressions on self-harm behaviours after controlling for age and gender. During the pandemic, children who witnessed family violence were more than twice as likely to report self-harm behaviours, compared with those who did not witness family violence (OR = 2.65,  $p < 0.05$ ). Children who reported physical violence were more than three times as likely to attempt self-harm, compared with those without such experience (OR = 3.55,  $p < 0.01$ ). Children who reported emotional violence were more

**Table 3** Help-seeking behaviours for victims who experience physical violence during the lockdown period ( $n = 145$ )

Questions	Yes	No	No response
1. Whether you were injured due to physical violence during the COVID-2019 pandemic?	0.7	97.2	2.1
2. Whether you knew there were some helping agencies for victims (e.g. hospitals, police station, hotlines, center for the protection of minors, legal aid station)?	69.0	30.3	0.7
3. Have you ever attempted to seek help from helping agencies?	1.4	98.6	0.0
4. Have your ever told your violence experience to anyone else?	14.5	81.4	4.1
5. Have you ever deliberately harmed yourself (e.g. knees and knife cut, burn, punch walls, take risky drugs)?	5.5	93.1	1.4

**Table 4** Logistic regressions of the impact of violence against children on self-harm behaviours during the lockdown period

Predictive variables	Self-harm behaviours	
	Adjusted OR (95% CI)	Sig
Family violence witness	2.65 (1.02–6.88)	0.04
Physical violence	3.55(1.46–8.57)	0.005
Emotional violence	2.59 (1.10–6.07)	0.02
Neglect	4.82 (1.84–12.63)	0.001

Note: Age and gender were controlled for each regression. OR = odds ratio, Sig = significance.

than twice as likely to deliberately harm themselves (OR = 2.59,  $p < 0.01$ ) than those without emotional violence. And children who were neglected were also more than four times as likely to report self-harm behaviours than those without such experience (OR = 4.82,  $p < 0.01$ ).

## Discussion

The COVID-19 pandemic will generate unforeseen impact on children's health and well-being. Despite the lack of data directly measuring the relationship between pandemics and child maltreatment, previous research has provided evidence that the risk of child maltreatment is increased during or after large-scale disasters (Keenan *et al.*, 2004; Seddighi *et al.*, 2021). This study is the first to report the prevalence of the maltreatment of children and the associated consequences during the pandemic in rural China, which is helpful to provide a reference for research and services on children's mental health during the epidemic.

First, we found emotional abuse is the most prevalent type of abuse experienced by children in China during the COVID-19 pandemic, which is consistent with Connell and Strambler's (2021) study. A study conducted in children's emergency departments reported that the frequency of emotional abuse increased from 2.52 percent before the pandemic to 7 percent during the pandemic (Sharma and Borah, 2020). The main reason for the high rate of emotional abuse is that confinement measures resulted in families spending more time together during the lockdown. School closures presented additional parenting burdens and the challenges of providing continuous care for children while working at home has likely precipitated heightened stress and anxiety (Coyne *et al.*, 2020). It is important to note that the lifetime prevalence of emotional abuse among Chinese children is higher than previous studies, and so is during the pandemic. More specifically, Finkelhor *et al.* (2013) showed that the lifetime rate of child maltreatment was 14.9 percent and Sharma and Borah (2020) found that the prevalence rate of emotional abuse was 7 percent during the pandemic. One plausible explanation is that worse education of rural Chinese parents in our sample may be associated with harsh parenting and emotional abuse (Yang *et al.*, 2005). Emotional abuse, as one of the most common and most easily overlooked forms of child abuse (Glaser, 2002), has been shown to negatively affect children's development, including brain and cognitive development as well as social and emotional development (Kim and Cicchetti, 2010; Hong *et al.*, 2018). Therefore, strategies to draw parents' attention to emotional abuse are warranted. Single-parent families are at greater risk for emotionally abusing their children, which is consistent with previous research (Mulder *et al.*, 2018; Wan and Luan, 2018; Wan *et al.*,

2020). Single-parent status was associated with poor parenting, or higher levels of parenting stress (Mullins *et al.*, 2011; Charlotte *et al.*, 2019). This may have put children in a high-risk environment for possible emotional abuse during the lockdown period. However, emotional abuse was more prevalent among families with higher education fathers during their lifetime, which is consistent with traditional 'severe father and kind mother' parenting image in China.

Secondly, we also found that the prevalence of physical violence towards children during lockdown was similar to its prevalence during their lifetime. Boys were found to experience more physical violence, which is consistent with previous studies in China and in other countries (Gao *et al.*, 2017; Kumar *et al.*, 2017; Wan *et al.*, 2020). The disparity in physical violence against boys and against girls may be attributed to gender-related behavioural characteristics (Cui *et al.*, 2016). Boys often demonstrate more aggressive and delinquent behaviour (Xing *et al.*, 2011), which may be regarded as misconduct that disturbs interpersonal harmony or being unfilial to their parents; this, in turn, leads to parents being more likely to practice corporal punishment on them (Qiao and Xie, 2017). In addition, the male gender stereotype endorses a 'stronger character' under artificial gender cognition in Confucian society; therefore, punishment for boys may be considered as preparation for their roles in adulthood (Antai *et al.*, 2016; Wan *et al.*, 2020). However, inconsistent with our study, studies conducted in American during the pandemic found that gender was not a predictor of physical violence (Lawson *et al.*, 2020; Xu *et al.*, 2020). This diversity may be due to differences in the characteristics of sample and differences in reporters. During the lifetime span before the lockdown, children from single-parent family tended to report higher physical violence, which is similar to previous findings (Wan *et al.*, 2020).

Thirdly, the prevalence of neglect during the lockdown period was also similar to its prevalence during the children's lifetime, especially among the children who have family members with drug abuse history and mental illness. These findings are consistent with studies conducted during the pandemic. For example, Xu (2020) found parents' mental health and substance abuse were significant predictors of child neglect. Parents with drug abuse history and mental illness were less capable of caring for their children, therefore failing to meet the children's immediate needs (Roscoe *et al.*, 2018). During the lockdown period, parents with drug abuse history and existing mental illness may experience a worsening of their mental health due to a lack of social support and professional help, which may lead to child neglect. Parental drug abuse history and mental illness were also risk factors for neglect and family violence witness before the lockdown. Father's education was a protective factor for domestic violence, which is also consistent with previous studies (Emre *et al.*, 2006; Jahromi *et al.*, 2015); however, it became non-

significant during the lockdown period. The possible explanation is that fathers, as the breadwinner in most families, were also anxious with the balance between their work and family during the lockdown period.

Fourthly, most of the respondents knew that there were agencies that could assist them; however, they did not seek official help. This phenomenon may be linked to Chinese characteristics regarding the disclosure of family violence or abuse. For Chinese people, family honour and pride or “saving face” are top priorities. Considering that in Chinese culture, family abuse is shameful, the victims may more likely prohibit disclosure of violence and help-seeking behaviour from social services (Chan, 2011; Kuo and Kavanagh, 1994; Yick *et al.*, 2003). Furthermore, professional help is not always available and helpful to them, especially during the lockdown period. One study revealed that there are barriers to the police service addressing domestic violence and saving children who are exposed to danger (Saxton *et al.*, 2020), as the police lack the necessary knowledge and resources to provide help to those who are subject to violence. On the contrary, help-seeking behaviour from children may irritate the perpetrators, leading to more abuse. In the meanwhile, because of lockdown, many child and youth welfare workers were no longer available, because they had to take care of their own children at home (United Service Trade Union, 2020); thus, the help-seeking resources were greatly reduced.

Finally, this study found that during the COVID-19 pandemic, children who experienced any maltreatment—including witnessing violence, physical abuse, emotional abuse and neglect—are more likely to deliberately harm themselves, which reiterates previous research suggesting that there was a significant small–medium association between child abuse and self-harm (Darke and Torok, 2013; Caron *et al.*, 2018). Social vulnerability emphasises that human beings can improve their ability to cope with injury by modifying or changing their own characteristics and behaviours (Cutter, 1996). Tian *et al.* (2020) found that there was a significant correlation between children’s resilience and self-harm, which could explain the negative effects of the pandemic on children’s self-harm behaviours. It reminds us that we should strengthen the early identification and intervention of self-harm and suicide behaviour of children who have experienced abuse and improve their resilience.

This study has several limitations that should be noted. First, this was a retrospective survey that required children to recall their experiences of violence before and during the COVID-19 pandemic; it inevitably involves recall bias, which may influence the validity of our survey. Multiple data sources should be adopted to reduce bias in the future. Secondly, all the measures were based on self-reporting from children at one point in time, which may involve common method variance and is

subject to social desirability. Future studies should consider using a longitudinal design to explore changes in the prevalence, risk factors and consequences of violence towards children, especially during major public health emergencies. Thirdly, the measures for help-seeking behaviours were rather general and the exact reasons for children not seeking help during different types of violence remain unknown. This information could help mental health professionals and social workers to design prevention and intervention programmes in future.

## **Conclusions**

This study is the first to estimate the prevalence of child maltreatment in Hubei, the Chinese province most affected by the COVID-2019, enriching international research on child maltreatment during the pandemic. Results show that: (1) emotional abuse is the most prevalent type of abuse experienced by children in China during the COVID-19 pandemic; (2) boys, rural children living in single-parent families, those having family members with a history of drug abuse and mental illness are at greater risk of maltreatment; (3) most of victims did not seek official help; and (4) all types of child maltreatment were positively associated with self-harm behaviours. These findings could be of great value in advising social workers to establish and implement early identification and intervention programmes in rural China, encouraging children who experience maltreatment to receive timely services during the COVID-2019 pandemic. In addition, promotion and training programmes to encourage help-seeking behaviours should be designed and implemented in rural schools by social workers and health professionals. Finally, a more fundamental and flexible child protection system should be established in rural China to promote the well-being of disadvantaged children, especially during a public health emergency.

## **Funding**

This study was supported by Public Health & Disease Control and Prevention, Major Innovation & Planning Interdisciplinary Platform for the “Double-First Class” Initiative, Renmin University of China.

## **Conflict of interest statement**

The author(s) declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## References

- Adams, C. M. (2006) 'The consequences of witnessing family violence on children and implications for family counselors', *The Family Journal*, **14**(4), pp. 334–41.
- Adhia, A., Drolette, L. M., Vander Stoep, A., Valencia, E. J. and Kernic, M. A. (2019) 'The impact of exposure to parental intimate partner violence on adolescent precocious transitions to adulthood', *Journal of Adolescence*, **77**(11), pp. 179–87.
- Affi, T. O., Taillieu, T., Kristene, C., Katz, L. Y., Tonmyr, L. and Sareen, J. (2015) 'Substantiated reports of child maltreatment from the Canadian incidence study of reported child abuse and neglect 2008: Examining child and household characteristics and child functional impairment', *Canadian Journal of Psychiatry*, **60**(7), pp. 315–23.
- Antai, D., Braithwaite, P. and Clerk, G. (2016) 'Social determinants of child abuse: Evidence of factors associated with maternal abuse from the Egypt demographic and health survey', *Journal of Injury & Violence Research*, **8**(1), pp. 25–34.
- Ajdukovic, M., Rajter, M. and Rezo, I. (2018) 'Individual and contextual factors for the child abuse potential of Croatian mothers: The role of social support in times of economic hardship', *Child Abuse & Neglect*, **78**, pp. 60–70.
- Babvey, P., Capela, F., Cappa, C., Lipizzi, C., Petrowski, N. and Ramirez-Marquez, J. (2021) 'Using social media data for assessing children's exposure to violence during the COVID-19 pandemic', *Child Abuse & Neglect*, **116**(2), pp. 104747.
- Berger, L. M. and Waldfogel, J. (2011) *Economic Determinants and Consequences of Child Maltreatment*, Paris, France, OECD.
- Berger, L. M. (2004) 'Income, family structure, and child maltreatment risk', *Children and Youth Services Review*, **26**(8), pp. 725–48.
- Boyle, A., Jones, P. and Lloyd, S. (2006) 'The association between domestic violence and self-harm in emergency medicine patients', *Emergency Medicine Journal*, **23**(8), pp. 604–07.
- Cafferky, B. M., Mendez, M., Anderson, J. R. and Stith, S. M. (2018) 'Substance use and intimate partner violence: A meta-analytic review', *Psychology of Violence*, **8**(1), pp. 110–31.
- Cao, Y. (2020) 'Domestic Abuse Victims: The Outbreak of the Weakened Self-help System', Southern Weekly, Advance Access published March, 21 2020, <http://www.infzm.com/contents/179582>.
- Caron, A., Lafontaine, M. F. and Bureau, J. F. (2018) 'Exploring the relationship between child maltreatment, intimate partner violence victimization, and self-injurious thoughts and behaviors', *Journal of Aggression, Maltreatment & Trauma*, **27**(7), pp. 759–76.
- Carrilho, C. G., Cougo, S. S., Bombassaro, T., Varella, A. A. B., Alves, G. S., Machado, S., Murillo-Rodriguez, E., Malaspina, D., Nardi, A. E. and Veras, A. B. (2019) 'Early trauma and cognitive functions of patients with schizophrenia', *Frontiers in Psychiatry*, **10**, pp. 1–8.
- Chan, K. L. (2011) 'Children exposed to child maltreatment and intimate partner violence: A study of co-occurrence among Hong Kong Chinese families', *Child Abuse & Neglect*, **35**(7), pp. 532–42.
- Charlotte, R., Karin van, D., Giulia, S., Camilla, L., Therese van, A., Floor van, S., Allan, H. Y., Philippe, C., Richard, M., Thomas, S., Michael, B., Argyris, S.,

- Geneviève, P. and Giovanni de, G. (2019) 'Promotion of wellbeing for children of parents with mental illness: A model protocol for research and intervention', *Frontiers in Psychiatry*, **9**, p. 728.
- Connell, C. M. and Strambler, M. J. (2021) 'Experiences with COVID-19 stressors and parents' use of neglectful, harsh, and positive parenting practices in the north-eastern United States', *Child Maltreatment*. Advance Access published March, 31 2021, 10.1177/10775595211006465.
- Coyne, L. W., Gould, E. R., Grimaldi, M., Wilson, K. G., Baffuto, G. and Biglan, A. (2020) 'First things first: Parent psychological flexibility and self-compassion during COVID-19', *Behavior Analysis in Practice*, 1–7. 10.1007/s40617-020-00435-w.
- Cui, N., Xue, J., Connolly, C. A. and Liu, J. (2016) 'Does the gender of parent or child matter in child maltreatment in China?', *Child Abuse & Neglect*, **54**, pp. 1–9.
- Cui, N. and Liu, J. (2020) 'Physical abuse, emotional abuse, and neglect and childhood behavior problems: A meta-analysis of studies in mainland China', *Trauma, Violence & Abuse*, **21**(1), pp. 206–24.
- Cutter, S. L. (1996) 'Vulnerability to environment hazards', *Progress in Human Geography*, **20**(4), pp. 529–39.
- Cutter, S. L. and Emrich, C. T. (2006) 'Moral hazards, social catastrophe: The changing face of vulnerability along the hurricane coasts', *The Annals of the American Academy of Political and Social Science*, **604**(1), pp. 102–12.
- Darke, S. and Torok, M. (2013) 'Childhood physical abuse, non-suicidal self-harm and attempted suicide amongst regular injecting drug users', *Drug and Alcohol Dependence*, **133**(2), pp. 420–26.
- Drake, B. and Jonson-Reid, M. (2013) 'Poverty and child maltreatment', in Korbin, J. and Krugman, R. D. (eds), *Handbook of Child Maltreatment*, New York, NY, Springer.
- Emre, Y., Gulsan, K., Betul, A. and Umran, S. (2006) 'Domestic violence during pregnancy in Turkey and responsibility of prenatal Healthcare providers', *American Journal of Perinatology*, **23**(2), pp. 93–103.
- Finkelhor, D., Turner, H. A., Shattuck, A. and Hamby, S. L. (2013) 'Violence, crime, and abuse exposure in a national sample of children and youth: An update', *JAMA Pediatrics*, **167**(7), pp. 614–21.
- Flynn-O'Brien, K. T., Rivara, F. P., Weiss, N. S., Lea, V. A., Marcelin, L. H., Vertefeuille, J. and Mercy, J. A. (2016) 'Prevalence of physical violence against children in Haiti: A national population based cross-sectional survey', *Child Abuse & Neglect*, **51**, pp. 154–62.
- Gao, Y., Atkinson-Sheppard, S. and Liu, X. (2017) 'Prevalence and risk factors of child maltreatment among migrant families in China', *Child Abuse & Neglect*, **65**, pp. 171–81.
- Girardet, R., Lahoti, S., Bolton, K. and Kellogg, N. (2016) 'Characteristics of cases submitted to a statewide system of child abuse experts', *Children and Youth Services Review*, **67**, pp. 198–202.
- Glaser, D. (2002) 'Emotional abuse and neglect (psychological maltreatment): A conceptual framework', *Child Abuse & Neglect*, **26**(6–7), pp. 697–714.
- Haj-Yahia, M. M., Hassan, N., Malka, M. and Sokar, S. (2019) 'Exposure to family violence in childhood, self-efficacy, and posttraumatic stress symptoms in young adulthood', *Journal of Interpersonal Violence*, **92**, pp. 088626051986008–28.



- Hong, S., Rhee, T. G. and Piescher, K. N. (2018) 'Longitudinal association of child maltreatment and cognitive functioning: Implications for child development', *Child Abuse & Neglect*, **84**, pp. 64–73.
- Jahromi, M. K., Jamali, S., Koshkaki, A. R. and Javadpour, S. (2015) 'Prevalence and risk factors of domestic violence against women by their husband in Iran', *Global Journal of Health Science*, **8**(5), pp. 175–83.
- Keenan, H. T., Marshall, S. W., Nocera, M. A. and Runyan, D. K. (2004) 'Increased incidence of inflicted traumatic brain injury in children after a natural disaster', *American Journal of Preventive Medicine*, **26**(3), pp. 189–93.
- Kim, J. and Cicchetti, D. (2010) 'Longitudinal pathways linking child maltreatment, emotion regulation, peer relations, and psychopathology', *Journal of Child Psychology and Psychiatry*, **51**(6), pp. 706–16.
- Kofman, Y. B. and Garfin, D. R. (2020) 'Home is not always a haven: The domestic violence crisis amid the COVID-19 pandemic', *Psychological Trauma: Theory, Research, Practice, and Policy*, **12**(S1), pp. S199–201.
- Kovler, M. L., Ziegfeld, S., Ryan, L. M., Goldstein, M. A., Gardner, R., Garcia, A. V. and Nasr, I. W. (2021) 'Increased proportion of physical child abuse injuries at a level I pediatric trauma center during the COVID-19 pandemic', *Child Abuse & Neglect*, **116**, p. 104756.
- Kumar, M. T., Kumar, S., Singh, S. P. and Kar, N. (2017) 'Prevalence of child abuse in school environment in Kerala, India: An ICAST-CI based survey', *Child Abuse & Neglect*, **70**, pp. 356–63.
- Kuo, C. L. and Kavanagh, K. H. (1994) 'Chinese perspectives on culture and mental health', *Issues in Mental Health Nursing*, **15**(6), pp. 551–67.
- Lawson, M., Piel, M. H. and Simon, M. (2020) 'Child maltreatment during the COVID-19 Pandemic: Consequences of parental job loss on psychological and physical abuse towards children', *Child Abuse & Neglect*, **110**, 104709.
- Lee, S. J., Ward, K. P., Lee, J. Y. and Rodriguez, C. M. (2021) 'Parental social isolation and child maltreatment risk during the COVID-19 pandemic', *Journal of Family Violence*, pp. 1–12. 10.1007/s10896-020-00244-3.
- Li, J. H., Zhu, X. H., Liang, M. T., Li, X. R. and Zhang, X. L. (2012) 'Investigation and analysis on neglect of Rural children aged 9~11 in Qingxin District, Qingyuan city', *South China Journal of Prevention Medicine*, **1**, pp. 62–4.
- Logan, G. P. and Semanchin, J. A. (2018) 'Predicting chronic neglect: Understanding risk and protective factors for CPS-involved families', *Child & Family Social Work*, **23**(2), pp. 264–72.
- McNeal, C. and Amato, P. R. (1998) 'Parents' marital violence: Long-term consequences for children', *Journal of Family Issues*, **19**(2), pp. 123–39.
- Mulder, T. M., Kuiper, K. C., van der Put, C. E., Stams, G. J. J. M. and Assink, M. (2018) 'Risk factors for child neglect: A meta-analytic review', *Child Abuse & Neglect*, **77**, pp. 198–210.
- Mullins, L. L., Wolfe-Christensen, C., Chaney, J. M., Elkin, T. D., Wiener, L., Hullmann, S. E., Fedele, D. A. and Junghans, A. (2011) 'The relationship between single-parent status and parenting capacities in mothers of youth with chronic health conditions: The mediating role of income', *Journal of Pediatric Psychology*, **36**(3), pp. 249–57.
- Pelton, L. H. (2015) 'The continuing role of material factors in child maltreatment and placement', *Child Abuse & Neglect*, **41**, pp. 30–9.

- Qiao, D. and Xie, Q. (2017) 'Public perceptions of child physical abuse in Beijing', *Child & Family Social Work*, **22**(1), pp. 213–25.
- Roscoe, J. N., Lery, B. and Chambers, J. E. (2018) 'Understanding child protection decisions involving parents with mental illness and substance abuse', *Child Abuse & Neglect*, **81**, pp. 235–48.
- Salem, M., Dargham, S. R., Kamal, M., Eldeeb, N., Alyafei, K. A., Lynch, M. A., Mian, M. and Mahfoud, Z. R. (2020) 'Effect of gender on childhood maltreatment in the state of Qatar: Retrospective study', *Child Abuse & Neglect*, **101**, p. 104314.
- Saxton, M. D., Jaffe, P. G., Dawson, M., Olszowy, L. and Straatman, A. L. (2020) 'Barriers to police addressing risk to children exposed to domestic violence', *Child Abuse & Neglect*, **106**, p. 104554.
- Seddighi, H., Salmani, I., Javadi, M. H. and Seddighi, S. (2021) 'Child abuse in natural disasters and conflicts: A systematic review', *Trauma, Violence & Abuse*, **22**(1), pp. 176–85.
- Sharma, A. and Borah, S. B. (2020) 'Covid-19 and domestic violence: An indirect path to social and economic crisis', *Journal of Family Violence*. Advance Access published July, 28 2020, 10.1007/s10896-020-00188-8.
- Stith, S. M., Liu, T., Davies, L. C., Boykin, E. L., Alder, M. C., Harris, J. M. and Dees, J. E. M. E. G. (2009) 'Risk factors in child maltreatment: A meta-analytic review of the literature', *Aggression and Violent Behavior*, **14**(1), pp. 13–29.
- Stoltenborgh, M., Bakermans-Kranenburg, M. J., Alink, L. R. A. and van Ijzendoorn, M. H. (2012) 'The universality of childhood emotional abuse: A meta-analysis of worldwide prevalence', *Journal of Aggression, Maltreatment & Trauma*, **21**(8), pp. 870–90.
- Tian, X., Yang, G., Jiang, L., Yang, R., Ran, H., Xie, F., Xu, X., Lu, J. and Xiao, Y. (2020) 'Resilience is inversely associated with self-harm behaviors among Chinese adolescents with childhood maltreatment', *PeerJ*, **8**, p. e9800.
- Tran, N. K., van Berkel, S. R., Alink, L. R. A. and van IJzendoorn, M. H. (2021) 'Child and family factors associated with child maltreatment in Vietnam', *Journal of Interpersonal Violence*, **36**(5–6), pp. NP2931–36.
- United Nations Children's Fund, Kenya Country Office, United States Centers for Disease Control and Prevention, & Kenya National Bureau of Statistics. (2012a) *Violence against Children in Kenya: Findings from a National Survey (2010)*, Nairobi, Kenya.
- United Nations Children's Fund, United States Centers for Disease Control and Prevention, & Muhimbili University of Health and Allied Science. (2012b) *Violence against Children in Tanzania: Findings from a National Survey (2009)*, Dodoma, Tanzania.
- United Service Trade Union. (2020) 'Sozialarbeiterin beim Jugendamt Frankfurt am Main (anonym)', Advance Access published April, 3 2020, <https://mehr-braucht-mehr.verdi.de/++co++cba2cc1a-95d3-11ea-a133-525400940f89>.
- Vial, A., van der Put, C., Stams, G. J. J. M., Kossakowski, J. and Assink, M. (2020) 'Exploring the interrelatedness of risk factors for child maltreatment: A network approach', *Child Abuse & Neglect*, **107**, p. 104622.
- Wan, G. and Luan, H. (2018) 'The spatial and temporal pattern and influencing mechanism of the risk of abuse of single parent girls', *Nankai Journal (Philosophy, Literature and Social Science Edition)*, **2**, pp. 88–99.

- Wan, G., Tang, S. and Xu, Y. (2020) 'The prevalence, posttraumatic depression and risk factors of domestic child maltreatment in rural China: A gender analysis', *Children and Youth Services Review*, **116**, 105266.
- Warner, K. (2007) *Perspectives on Social Vulnerability*, Bonn, United Nations University, Institute for Environment and Human Security.
- Wong, J. Y.-H., Wai, A. K.-C., Wang, M. P., Lee, J. J., Li, M., Kwok, J. Y.-Y., Wong, C. K.-H. and Choi, A. W.-M. (2021) 'Impact of COVID-19 on child maltreatment: Income instability and parenting issues', *International Journal of Environmental Research and Public Health*, **18**(4), p. 1501.
- Xing, X., Wang, M., Zhang, Q., He, X. and Zhang, W. (2011) 'Gender differences in the reciprocal relationships between parental physical aggression and children's externalizing problem behavior in China', *Journal of Family Psychology*, **25**(5), pp. 699–708.
- Xu, Y., Wu, Q., Jedwab, M. and Levkoff, S. E. (2020) 'Understanding the relationships between parenting stress and mental health with grandparent kinship caregivers' risky parenting behaviors in the time of COVID-19', *Journal of Family Violence*, pp. 1–13. 10.1007/s10896-020-00228-3.
- Yang, M. (2015) 'The effect of material hardship on child protective service involvement', *Child Abuse & Neglect*, **41**, pp. 113–25.
- Yang, Y., She, C. and Zhang, L. (2005) 'Comparison of parenting styles of children and adolescents between urban and rural areas', *Journal of Shandong Normal University (Social Science Edition)*, **6**, pp. 152–55.
- Yick, A. G., Shibusawa, T. and Agbayani-Siewert, P. (2003) 'Partner violence, depression, and practice implications with families of Chinese descent', *Journal of Cultural Diversity*, **10**(3), pp. 96–104.
- Zhang, H. (2020) 'The influence of the ongoing COVID-19 pandemic on family violence in China', *Journal of Family Violence*, pp. 1–11. 10.1007/s10896-020-00196-8.