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Abusive and positive parenting behavior in Japan during the COVID-19 pandemic under the state of emergency

Yui Yamaoka a,*, Mariko Hosozawa b,c, Makiko Sampei d, Naomi Sawada d,e, Yusuke Okubo d,f, Kyoko Tanaka g, Arisa Yamaguchi g, Mayumi Hangai d,h, Naho Morisaki d

a Department of Global Health Promotion, Tokyo Medical and Dental University, Japan
b Bureau of International Health Cooperation, National Center for Global Health and Medicine, Tokyo, Japan
c Department of Pediatrics, Juntendo University, Tokyo, Japan
d Department of Social Medicine, National Center for Child Health and Development, Tokyo, Japan
e Department of Health Communication, School of Public Health, The University of Tokyo, Tokyo, Japan
f Department of Epidemiology, UCLA Fielding School of Public Health, CA, USA
g Department of Psychosocial Medicine, National Center for Child Health and Development, Tokyo, Japan
h Department of Pediatrics, The University of Tokyo, Tokyo, Japan

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ABSTRACT

Background: The Coronavirus Disease 2019 (COVID-19) pandemic has changed the lives of children and parents, raising concerns about child maltreatment.

Objective: We examined the prevalence of abusive parenting behavior during the pandemic of the COVID-19 and its relations with physical, psychological, and social factors and positive parenting behavior.

Participants and setting: An online survey was performed during the COVID-19 state of emergency in Japan. Participants were 5344 parents of children aged 0–17 years.

Methods: We conducted an anonymous online survey using multiple platforms, including websites of child-related organizations and social networking services (SNS). Multiple logistic regression analyses were performed to identify factors associated with abusive behavior.

Results: One-fifth of parents reported abusive behaviors, whereas over 80% of parents reported positive parenting behaviors (e.g., empathizing with a child). Abusive parenting behaviors were associated with longer screen time (6+ hours per day: OR, 1.44; 95%CI, 1.05–1.98), poor maternal mental health (K6 = 13+: OR, 2.23; 95%CI, 1.71–2.89), and the occurrence of domestic violence (OR, 4.54; 95%CI, 3.47–5.95). Positive parenting behaviors, especially showing empathy, were associated with lower risks of abusive behaviors (OR, 0.51: 95%CI, 0.39–0.66).

Conclusions: Positive parenting behavior is essential to the prevention of child maltreatment during the COVID-19 pandemic.

* Corresponding author at: Department of Global Health Promotion, Tokyo Medical and Dental University, 1-5-45 Yushima, Bunkyo-ku, Tokyo, 113-8519, Japan.
E-mail address: yamaoka.hlth@tmd.ac.jp (Y. Yamaoka).

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1. Introduction

The coronavirus disease 2019 (COVID-19) pandemic has affected Japanese society dramatically. To prevent transmissions of the COVID-19, the government asked all elementary, middle, and high schools to close on March 2nd 2020. On April 16th 2020, the government declared a state of emergency, which ended one month later, on May 25th. The government sought a voluntary lockdown to reduce social contacts by 80% and control the COVID-19 epidemic in Japan (Nikkei Asia, 2020). There were official requests to stay home without strict restrictions or legal penalty for going out or public gathering. School closure conducted up to 87% of kindergartens, primary schools, middle schools, high schools, and special education schools by May 11st, 2020 (The Ministry of Education Culture Sports Science and Technology, 2020b). These preventive interventions were needed from a public health perspective; however, children and parents had struggled with unexpected disruption in daily routines, fear and anxiety, and concern about the future (Singh et al., 2020). The COVID-19 outbreak led to a decrease in physical activity and an increase in sedentary behavior among adults and children (Moore et al., 2020). Negative effects of the COVID-19 pandemic on the mental health of parents and children (Patrick et al., 2020) and on parent-child interactions (Spinelli et al., 2020) have been reported so far.

Stressful stay-at-home situations have raised concerns about child maltreatment. In the past, cases of child maltreatment increased after the Great Recession (Brooks-Gunn et al., 2013; Schneider et al., 2017), natural disasters such as hurricanes and earthquakes (Curtis et al., 2000; Keenan et al., 2004), and during or after pandemics/epidemics (Bakrani et al., 2020; Green et al., 2018). In April 2020, the World Health Organization (WHO) stated that violence against children was a hidden crisis of the COVID-19 pandemic (World Health Organization, 2020a). Current infection prevention measures were likely to reduce face-to-face contact of teachers or social workers, which could limit their opportunities to provide services. Protecting children from violence, by educating caregivers on managing abusive behaviors and creating warm parent-child interactions, has become especially important (Caron et al., 2020). After social distancing and quarantine had been implemented in the United States (US) (Barboza et al., 2020) and Germany (Jentsch & Schnack, 2020), the number of reports of child maltreatment decreased. However, these declines likely reflected fewer opportunities to detect child maltreatment rather than fewer occurrences of abuse.

To implement effective interventions toward child maltreatment, an understanding of the risks and protective factors is essential. Changes in the lives of children and parents due to the COVID-19 pandemic may be a reason for the increased occurrence of child maltreatment. Creating Safe, Stable, and Nurturing Relationships (SSNRs) is one of the primary strategies recommended by the US Centers for Disease Control and Prevention (CDC) to protect children from maltreatment (Centers for Disease Control and Prevention, 2014). Establishing positive and supportive parent-child relationships is helpful to decrease child maltreatment. For example, encouraging children to express their feelings and limiting media exposure have been linked to lower post-traumatic stress symptoms after natural disasters or terrorism (Cobham et al., 2016).

Until now, few studies of child maltreatment or positive parenting practices during the COVID-19 pandemic have been published. Lawson et al. conducted an online survey in the US to assess child maltreatment among parents of children aged 4–10 years from mid-April to mid-May in the US (Lawson et al., 2020). They reported that psychological and physical abuse were more likely to have occurred among parents who had lost jobs, were depressed, or had previously abused children psychologically. In Italy, structured parenting practices (i.e., making daily schedules or routines) were associated with fewer emotional problems during the COVID-19 pandemic (Romero et al., 2020). However, these studies did not investigate whether positive parenting behavior contributed to the lower risks of abusive behaviors. Therefore, we studied: (1) the prevalence of abusive behaviors; (2) the relations between physical, psychological, and social risk factors and abusive behavior; and (3) the relations between positive and abusive behavior during the COVID-19 outbreak. This study aimed to understand risk and protective factors for abusive behaviors under the pandemic using the survey of large samples.

2. Methods

2.1. Data collection

2.1.1. Survey procedure

We conducted an anonymous online survey named CORONA-CODOMO Survey (i.e., CODOMO means “children” in Japanese) from April 30th to May 31st. This survey targeted parents/guardians (“parents”) of children aged 0–17 years old and children aged 7–17 years old themselves. The survey was disseminated through a number of platforms, including the National Center for Child Health Development, child-related organizations, and social networking services (SNS). The questionnaire comprised two parts: one answered by parents about the health and current status of their children and themselves; the other answered by children aged 7 years or older. The study was approved by the institutional review board of the National Center for Child Health and Development (approval #2020-21).

2.1.2. Survey items and study subjects

Parents, the majority (93.6%) of whom were mothers, answered 82 questions regarding demographics, daily lives of children and themselves, and positive parenting and abusive behaviors. Details of the survey procedure are explained in the report of CORONA-CODOMO Survey (The National Center for Child Health Development, 2020a; The National Center for Child Health Development, 2020b). To ease the burden of answering all the questions at once, we provided to parents the opportunities to continue or quit the survey during the questionnaire. Overall, 6161 parents answered the questionnaire. After excluding those who did not complete the questionnaire (n = 631) or did not report the ages of their children (n = 141), responses of 5344 parents were analyzed as study
subjects.

2.2. Measures

2.2.1. Demographics

Demographic variables included the sex of the children, the number of families living together, the number of rooms they occupied, whether the child had been receiving special education services, and family financial condition. To consider the effects of environmental changes due to school closures, we used grades for the analyses rather than child age. Ages were grouped into four ranges: early childhood (0–5 years old), middle childhood (grades 1–3; 6–8 years old), late childhood (grades 4–6; 9–11 years old), and adolescent (grades 7–12; 12–17 years old) based on developmental stage, child-care or educational setting and sample distributions. Financial condition was assessed by asking parents the following question: “How do you feel your current financial condition is compared to that in January 2020 (before the lockdown period)?” Responses were coded as 1 for struggling families who answered “worse than before” (23.8% of study samples), and 0 for those whose conditions were “unchanged” (72.0%) or “better than before” (3.1%). The responses for “prefer not to answer/do not know” were categorized into missing for each question in the analyses.

2.2.2. Abusive behaviors

Six items were used to assess child maltreatment: two items for physical abuse, two items for psychological abuse, one item for sexual abuse, and one item for neglect, in accordance with the previous Japanese studies (Isumi et al., 2018; Takehara et al., 2017). We asked parents whether any adult family members conducted the following abusive behaviors: (1) violent shaking; (2) slapping or hitting; (3) threats or insults; (4) yelling; (5) sexual abuse or exposure to sexual media; or (6) not providing necessities such as food, clothing, and educational materials.

2.2.3. School attendance and daily activities of children

The information on school attendance and daily activities under the COVID-19 pandemic were obtained. We categorized school attendance status into three groups: attended, did not attend, and had not enrolled. We assessed four daily activities among children: studying, physical activities, “screen time” (e.g., watching TV, playing video games, or using smartphones except for studying), and sleeping schedule. Parents answered the frequencies of each daily activity and whether any changes in these activities had been observed after the COVID-19 pandemic (January 2020) (Supplementary Table 1).

2.2.4. Daily activities and psychological distress of parents

We asked parents questions regarding their daily activities and psychological distress of parents under the COVID-19 pandemic. (Supplementary Table 1) These questions included the following: how often they had left the house the week before; how often they had communicated with close friends and confidants; whether they had used stress and coping methods for themselves or others; whether they had observed physical or verbal abuse (domestic violence (DV)) among adult family members. Parents also were queried about their understanding and perception of the COVID-19 and their attitude toward the media because lack of knowledge or information overload may have induced anxiety and stress. Parental psychological distress was assessed using the Japanese version of the Kessler Psychological Distress Scale (K6) (Sakurai et al., 2011) and categorized into four groups: no (0–4), mild (5–9), moderate (10–12), and severe psychological distress (13 and over).

2.3. Positive parenting behavior

We asked two questions in each of three different areas: emotional support, supports regarding the COVID-19, and family resilience. The questions regarding emotional support included “Did you empathize with the child’s feeling without denying them?” and “Did you let the child play to express feelings?” The questions about supports regarding the COVID-19 consisted of “Did you explain the situation regarding the COVID-19 to the child using simple words?” and “Did you avoid over-exposing the child to news and media regarding the COVID-19?”. The questions of family resilience were “Did family members talk together about what to do?” and “Did you stay hopeful even in difficult times?”. These items were selected based on recommendations from the WHO and other professional organizations (American Academy of Pediatrics, 2020; Bethell et al., 2019; Garfin et al., 2020; Japan Pediatric Society, 2020; World Health Organization, 2020b; World Health Organization, 2020c). The response scales were categorized into 1 for “always, often, sometimes” and 0 for “rarely, none” (Supplementary Table 1).

2.4. Statistical analysis

First, we described demographic characteristics, the quality of children’s and parental lives under the state of emergency, and positive parenting behaviors. Second, we examined the proportions of each abusive behavior during the pandemic within each grade. Third, we conducted multiple logistic regression analyses to examine factors associated with any abusive behaviors except for yelling. Because yelling behavior was frequently reported among samples (49.2%) and there was a difficulty to set a threshold between harsh discipline and psychological abuse, we excluded yelling behavior and focused on severer forms of child maltreatment. Model 1 included only demographic factors. Model 2 added both frequencies and changes of activities in child’s lives. Studying hours were not added due to moderate correlation with child’s grade ($\rho = 0.621$) using Spearman’s rank correlation coefficients. Frequencies and changes of physical exercise and screen time were simultaneously added into Model 2 because they were weakly correlated (physical.
Table 1
Demographics, lives of children and parents under the pandemic.

| Total (n = 5344) | n     | %     |
|-----------------|-------|-------|
| **Demographics** |       |       |
| Child grade     |       |       |
| Before elementary school | 2447 | 45.8% |
| Grades 1–3       | 1189  | 22.2% |
| Grades 4–6       | 907   | 17.0% |
| Grades 7–12      | 801   | 15.0% |
| Child sex        |       |       |
| Female           | 2485  | 46.5% |
| Male             | 2827  | 52.9% |
| Living with parents |     |       |
| Two parents      | 4828  | 90.3% |
| Single/other family | 508   | 9.5%  |
| Number of children |     |       |
| One child        | 2264  | 42.4% |
| Two children     | 2417  | 45.2% |
| Three+ children  | 659   | 12.3% |
| Parent employment |      |       |
| Full time work   | 1803  | 33.7% |
| Part time        | 1752  | 32.8% |
| Not working      | 1773  | 33.2% |
| Number of rooms  |       |       |
| 1–2 rooms        | 717   | 13.4% |
| 3–4 rooms        | 3538  | 66.2% |
| 5+ rooms         | 1078  | 20.2% |
| Special education |      |       |
| No               | 4757  | 89.0% |
| Yes              | 587   | 11.0% |
| Worsening economic condition\a | | |
| No               | 4012  | 75.1% |
| Yes              | 1271  | 23.8% |
| **Life of children under the state of emergency** | | |
| Attendance for school, daycare, kindergarten | | |
| Attended         | 759   | 14.2% |
| Did not attend   | 4181  | 78.2% |
| Not enrolled     | 401   | 7.5%  |
| Studying hours per day during last week | | |
| None             | 1470  | 27.5% |
| < 2 h            | 2430  | 45.5% |
| 2+ hours         | 1303  | 24.4% |
| Changes of studying hours\a | | |
| Unchanged, increased | 3925 | 73.4% |
| Decreased        | 1031  | 19.3% |
| Physical activity during last week | | |
| None             | 467   | 8.7%  |
| Several times per week | 2116 | 39.6% |
| Everyday         | 2666  | 49.9% |
| Changes of physical activity\a | | |
| Unchanged, increased | 852  | 15.9% |
| Decreased        | 4359  | 81.6% |
| Screen time per day during last week | | |
| <2 h             | 1716  | 32.1% |
| 2–<6 h           | 2875  | 53.8% |
| 6+ hours         | 641   | 12.0% |
| Changes of screen time\a | | |
| Unchanged, decreased | 918   | 17.2% |
| Increased        | 4331  | 81.0% |
| Sleeping pattern\a |   | |
| Unchanged, changed by <2 h | 4529 | 84.7% |
| Changed by 2+ hrs, irregular | 748  | 14.0% |
| **Life of parents under the state of emergency** | | |
| Psychological distress | | |
| None (K6: 0–4)   | 2041  | 38.2% |
| Mild (K6: 5–9)   | 1700  | 31.8% |
| Moderate (K6: 10–12) | 731  | 13.7% |
| Severe (K6: 13+) | 872   | 16.3% |
| Making contacts  | | |
| Always, often, sometimes | 3809 | 71.3% |
| None, a little   | 1535  | 28.7% |
| Self-care        | | |
| Always, often, sometimes | 3276 | 61.3% |
| None, a little   | 2068  | 38.7% |
| Knowledge of COVID19 | | |
| Very well, well, some extent | 4864 | 91.0% |
| Not at all, rarely | 456  | 8.5%  |
| Going out        | | |
| Never            | 243   | 4.5%  |
| Only for necessities | 2253 | 42.2% |
| For work, visit hospital | 1210 | 22.6% |
| Non-essential going out | 1635 | 30.6% |
| Attitude toward news from the media | | |
| Able to select needed information | 1904 | 35.6% |
| Avoid too much exposure | 866  | 16.2% |
| Confused with information | 2554 | 47.8% |
| Domestic violence among family members | | |
| None             | 4918  | 92.0% |
| Physical/ psychological abuse | 370  | 6.9% |
| Positive parenting behavior | | |
| Empathize child’s feeling | Rarely, Never | 599   | 11.2% |

(continued on next page)
exercise, \( \rho = -0.253 \); screen time, \( \rho = 0.379 \)). Model 3 added psychological distress and activities of parental lives. Model 4 added positive parenting behaviors to assess the relations between each factor and any abusive behavior.

Fourth, we stratified abusive behaviors as psychological abuse (Model 5) and physical abuse (Model 6) as dependent variable in the analysis and investigated factors associated with them. Odds ratios (ORs) and corresponding 95% confidence intervals (95%CIs) were reported. All analyses were performed using Stata/MP 16.1 (StataCorp LP, College Station, TX, USA).

3. Results

3.1. Description of study participants

Table 1 shows demographic variables, the lives of children and parents, and positive parenting behaviors during the COVID-19 pandemic. Most (94.0%) responders were mothers, more than 40% of whom had preschool-age children (\( n = 2447 \)). Approximately one-fourth of parents felt their economic conditions had worsened during the pandemic (i.e., since January 2020). During this period, 85.9% of school-age children and 68.9% of younger children did not attend school, kindergarten, or daycare. Under these circumstances, one-fourth children studied 2 h or longer per day, nearly half of children conducted physical activities every day, and two-thirds of children had screen time for 2 h or longer. Over 80% of school-age children had decreased physical activities and increased screen time during the pandemic compared to these activities in January 2020. More than half of parents felt psychological distress (i.e., K6: 5+) and one in six parents felt severe psychological distress (i.e., K6: 13+). Nearly one-third of parents could not contact people close to them, nor were they able to provide self-care in their daily lives. Parents tended to go out only for essentials.

Table 1 (continued)

| Description of study participants | n (%) |
|-----------------------------------|-------|
| Let child play to express feelings | 4559 85.3% |
| Limit media exposure              | 4427 82.8% |
| Explain using friendly words      | 3432 64.2% |
| Have family discussion            | 1793 33.6% |
| Stay hopeful attitude             | 3755 70.3% |
|                                    | 2168 40.6% |
|                                    | 622  11.6% |
|                                    | 4563 85.4% |

* Compared to those in January 2020.

Fig. 1. Types of abusive and neglectful behaviors during pandemic by child age.
(42.2%) and felt confused with information from the media (47.8%). Physical or verbal DV among adult family members occurred in 6.9% of all participants. Even in these difficult situations, most parents supported children by empathizing with their children (85.3%), letting their children play to express their feelings (82.8%), and maintaining a hopeful attitude (85.4%).

### 3.2. Child maltreatment during the COVID-19 pandemic

Fig. 1 shows proportions of parent-reported abusive and neglectful behavior during the pandemic. Except for “yelling” (49.2%), the most frequent behavior was “insults/threats” (11.5%) followed by “slapping/hitting” (11.3%). Overall, approximately one-fifth of parents (18.3%) reported abusive behaviors. Children in grades 1–3 were more likely to experience maltreatment than children of other ages. For example, 15.2% of children in grades 1–3 experienced insults/threats, and 14.5% of them were slapped or hit. Sexual abuse and neglect were reported rarely (0.1% and 1.0% of total samples, respectively) among study samples.

#### Table 2

Relations between abusive behaviors and lives of children and parents living under COVID19 pandemic.

| Model 1 | Model 2 | Model 3 | Model 4 |
|---------|---------|---------|---------|
| Child sex: Male (ref = Female) | 1.30 1.12 1.51 | 1.31 1.12 1.53 | 1.29 1.09 1.52 | 1.23 1.03 1.46 |
| Child grade: Before school age | 4.69 3.46 6.36 | 5.75 4.11 8.04 | 4.66 3.28 6.63 | 5.56 3.79 8.16 |
| Grade 1–3 | 4.20 3.09 5.71 | 4.69 3.36 6.54 | 3.88 2.75 5.48 | 4.22 2.91 6.13 |
| Grade 4–6 | 2.37 1.70 3.28 | 2.60 1.84 3.67 | 2.41 1.68 3.45 | 2.48 1.69 3.66 |
| Two parents: No (ref = Yes) | 1.49 1.17 1.91 | 1.49 1.15 1.94 | 1.56 1.19 2.05 | 1.65 1.25 2.19 |
| Number of siblings: Two children (ref = Only child) | 1.97 1.67 2.32 | 1.82 1.52 2.18 | 1.77 1.47 2.14 | 1.79 1.47 2.18 |
| Three + children | 2.92 2.30 3.70 | 2.75 2.14 3.54 | 2.74 2.10 3.57 | 2.78 2.11 3.68 |
| Maternal working status: Part time | 0.98 0.82 1.18 | 0.90 0.74 1.10 | 0.93 0.75 1.14 | 0.91 0.73 1.14 |
| Not working | 1.02 0.85 1.21 | 1.00 0.83 1.21 | 0.99 0.80 1.22 | 1.00 0.80 1.25 |
| Number of rooms: 1–2 rooms (ref = 3–4 rooms) | 0.89 0.72 1.12 | 0.97 0.77 1.22 | 0.96 0.75 1.23 | 0.96 0.74 1.25 |
| 5+ rooms | 0.88 0.73 1.06 | 0.86 0.70 1.05 | 0.87 0.70 1.08 | 0.85 0.68 1.07 |
| Child special education: Yes (ref = No) | 1.73 1.40 2.14 | 1.63 1.30 2.05 | 1.36 1.07 1.74 | 1.40 1.08 1.81 |
| Worsening financial condition: Yes (ref = No) | 1.47 1.25 1.73 | 1.40 1.18 1.67 | 1.18 0.98 1.43 | 1.17 0.96 1.42 |
| Life of child | | | | |
| Going school: Didn’t attend | 1.08 0.86 1.35 | 1.21 0.95 1.54 | 1.13 0.87 1.45 | |
| (ref: attended) Not enrolled | 0.65 0.38 1.09 | 0.64 0.37 1.10 | 0.57 0.31 1.03 | |
| Less studying: Yes (ref = No) | 0.88 0.72 1.09 | 0.80 0.64 1.00 | 0.84 0.67 1.06 | |
| Physical activity: None | 0.92 0.67 1.28 | 0.90 0.64 1.27 | 0.76 0.53 1.09 | |
| (ref= every day) Several time per week | 1.13 0.96 1.34 | 1.15 0.96 1.38 | 1.09 0.91 1.32 | |
| Less physical activity: Yes (ref = No) | 1.16 0.90 1.51 | 1.08 0.83 1.41 | 1.15 0.87 1.52 | |
| Screen time (ref: <2 h): 2–<6 h per day | 1.26 1.04 1.52 | 1.23 1.00 1.51 | 1.20 0.97 1.48 | |
| 6+ hours per day | 1.71 1.29 2.27 | 1.65 1.22 2.22 | 1.44 1.05 1.98 | |
| More screen time: Yes (ref = No) | 1.20 0.93 1.56 | 1.14 0.87 1.49 | 1.06 0.80 1.41 | |
| Sleeping pattern: Changed (ref = No) | 1.49 1.17 1.90 | 1.24 0.95 1.60 | 1.26 0.96 1.66 | |
| Life of parent | | | | |
| Psychological distress: Mild (5–9) (ref: K6 0–4) Moderate (10–12) Severe (13+) | 1.25 1.01 1.54 | 1.25 1.01 1.56 | 1.63 1.26 2.10 | 1.58 1.21 2.07 |
| Going out last week: Only necessities Only for work/hospital | 1.27 0.83 1.95 | 1.31 0.82 2.05 | 1.45 0.92 2.29 | 1.46 0.90 2.38 |
| Non-essential go out | 1.67 1.09 2.58 | 1.63 1.02 2.60 | |
| Less taking contacts: Yes (ref = No) | 1.27 1.05 1.52 | 1.13 0.93 1.37 | |
| Less providing self-care: Yes (ref = No) | 1.20 1.01 1.43 | 1.08 0.90 1.29 | |
| Less knowledge for COVID19: Yes (ref = No) | 1.14 0.86 1.51 | 1.03 0.76 1.38 | |
| Attitude toward media: Avoid media | 1.25 0.98 1.59 | 1.28 0.98 1.66 | |
| (ref = Could select info) Confused with info | 1.14 0.95 1.37 | 1.15 0.94 1.39 | |
| Domestic violence: Yes (ref = No) | 4.58 3.55 5.91 | 4.54 3.47 5.95 | |
| Positive parenting practices (PPPs) | | | | |
| Show empathy: Yes (ref = No) | 0.51 0.39 0.66 | |
| Let child free expression: Yes (ref = No) | 0.77 0.60 0.995 | |
| Limit news: Yes (ref = No) | 0.84 0.70 1.02 | |
| Explain with easy words: Yes (ref = No) | 1.33 1.07 1.65 | |
| Have family talk: Yes (ref = No) | 0.67 0.55 0.80 | |
| Stay hopeful: Yes (ref = No) | 0.69 0.54 0.88 | |

* Compared to those in January 2020.
3.3. Characteristics associated with abusive behavior

We conducted multiple logistic regression analyses to examine factors associated with abusive behaviors (Table 2). The reference category for each model was those who did not exhibit each behavior. Among demographic variables, risk factors associated with abusive behavior were male children (OR, 1.23; 95%CI, 1.03–1.46), before school age (OR 5.56; 95%CI, 3.79–8.16), higher numbers of children (three+ children; OR, 2.78; 95%CI, 2.11–3.68), and children with special educational needs (OR, 1.40; 95%CI, 1.08–1.81) in model 4. Although worsening financial condition was associated with abusive behavior in model 2 (OR, 1.40; 95%CI, 1.18–1.67), the point estimate moved toward the null and statistical significance was diminished in the model 3 (OR, 1.18; 95%CI, 0.98–1.43).

In terms of children's lives in model 2, longer screen time (6+ hours: OR, 1.71; 95%CI, 1.29–2.27) and changed sleeping patterns (OR, 1.49; 95%CI, 1.17–1.90) were associated with increased risks of abusive behaviors. After adding parental lives and positive parenting variables, only longer screen time was associated with abusive behavior (OR, 1.65; 95%CI, 1.22–2.22; model 3). For parents, severe psychological distress (OR for K6 13+; 2.34; 95%CI, 1.84–2.98) and non-essential going out (OR, 1.67; 95%CI, 1.09–2.58), and DV (OR, 4.58; 95%CI, 3.55–5.91) were associated with elevated odds of abusive behaviors in model 3. In contrast, positive parenting

Table 3
Relations between each abusive behavior and lives of children and parents living under COVID19 pandemic.

| Model 5 | Model 6 |
|---------|---------|
| Psychological abuse (n = 617) | Physical abuse (n = 603) |
| OR | 95%CI | OR | 95%CI |
| **Child sex: Male (ref = Female)** | **Child sex: Male (ref = Female)** |
| Male | 1.14 | 0.93 | 1.41 | 1.48 | 1.20 | 1.82 |
| **Child grade:** | **Child grade:** |
| Before school age | 3.86 | 2.48 | 6.00 | 7.45 | 4.40 | 12.6 |
| Grade 1–3 | 3.30 | 2.15 | 5.06 | 5.65 | 3.37 | 9.46 |
| Grade 4–6 | 2.02 | 1.29 | 3.16 | 3.17 | 1.85 | 5.42 |
| **Two parents:** | **Two parents:** |
| No (ref = Yes) | 1.46 | 1.05 | 2.05 | 1.66 | 1.19 | 2.32 |
| Two children | 1.47 | 1.16 | 1.86 | 2.46 | 1.92 | 3.15 |
| Three+ children | 2.65 | 1.93 | 3.66 | 3.24 | 2.31 | 4.54 |
| **Maternal working status (ref = full time):** | **Maternal working status (ref = full time):** |
| Part time | 0.83 | 0.64 | 1.08 | 0.92 | 0.71 | 1.20 |
| Not working | 0.91 | 0.70 | 1.18 | 1.00 | 0.77 | 1.30 |
| **Number of rooms:** | **Number of rooms:** |
| 1–2 rooms | 0.98 | 0.72 | 1.34 | 1.10 | 0.81 | 1.48 |
| 3+ rooms | 0.79 | 0.60 | 1.05 | 0.90 | 0.69 | 1.18 |
| **Child grade:** | **Child grade:** |
| Before school age | 1.23 | 0.91 | 1.65 | 1.44 | 1.07 | 1.94 |
| Non-working | 1.01 | 0.80 | 1.28 | 1.20 | 0.95 | 1.51 |
| **Life of child:** | **Life of child:** |
| Going to school | 1.31 | 0.95 | 1.79 | 0.96 | 0.72 | 1.30 |
| (ref: attended) | 0.36 | 0.15 | 0.86 | 0.79 | 0.41 | 1.52 |
| Less studying | 0.89 | 0.68 | 1.17 | 0.81 | 0.61 | 1.07 |
| **Physical activity (ref: every day):** | **Physical activity (ref: every day):** |
| None | 0.73 | 0.47 | 1.12 | 0.81 | 0.52 | 1.25 |
| Several times per week | 1.18 | 0.94 | 1.48 | 0.93 | 0.74 | 1.16 |
| **Less physical activity:** | **Less physical activity:** |
| Yes (ref = No) | 1.14 | 0.80 | 1.61 | 1.32 | 0.94 | 1.86 |
| Screen time (ref: <2 h) | 1.44 | 1.10 | 1.88 | 1.01 | 0.78 | 1.29 |
| 2–6 h per day | 1.86 | 1.28 | 2.70 | 1.26 | 0.87 | 1.83 |
| 6+ hours per day | 1.56 | 1.10 | 2.17 | 1.28 | 0.86 | 1.71 |
| **More screen time:** | **More screen time:** |
| Changed (ref = No) | 1.47 | 1.08 | 2.00 | 1.27 | 0.92 | 1.76 |
| **Life of parent:** | **Life of parent:** |
| Psychological abuse | 1.45 | 1.10 | 1.92 | 1.08 | 0.83 | 1.40 |
| (ref: K6 0–4) | 2.15 | 1.56 | 2.97 | 1.41 | 1.02 | 1.94 |
| Severe (13+ | 2.74 | 2.00 | 3.74 | 1.71 | 1.26 | 2.33 |
| Going out last week | 1.06 | 0.63 | 1.79 | 1.60 | 0.89 | 2.87 |
| Only necessities | 1.10 | 0.63 | 1.92 | 1.54 | 0.83 | 2.85 |
| **Attitude toward media:** | **Attitude toward media:** |
| Avoid media | 1.35 | 0.98 | 1.85 | 1.25 | 0.92 | 1.70 |
| **Domestic violence:** | **Domestic violence:** |
| Confused with info | 1.35 | 1.06 | 1.71 | 1.00 | 0.79 | 1.26 |
| Positive parenting practices (PPPs): | Positive parenting practices (PPPs): |
| Show empathy | 0.48 | 0.36 | 0.64 | 0.48 | 0.35 | 0.64 |
| Let child free expression | 0.72 | 0.54 | 0.97 | 0.94 | 0.69 | 1.28 |
| Limit news | 1.01 | 0.81 | 1.27 | 0.74 | 0.59 | 0.93 |
| Explain with easy words | 1.54 | 1.18 | 2.01 | 1.04 | 0.81 | 1.33 |
| Have family talk | 0.72 | 0.57 | 0.99 | 0.80 | 0.64 | 0.995 |
| Stay hopeful | 0.62 | 0.47 | 0.82 | 0.87 | 0.65 | 1.16 |

*A The reference group for each model was those who did not conduct each behavior.

* Compared to those in January 2020.
behaviors were associated with lower odds of abusive behaviors in model 4: empathizing with the child (OR, 0.51; 95%CI, 0.39–0.66); letting the child express his/her feelings (OR, 0.77; 95%CI, 0.60–0.995); having family talks (OR, 0.67; 95%CI, 0.55–0.80); staying hopeful (OR, 0.69; 95%CI, 0.54–0.88). Contrary, explaining the pandemic to the child using simple words was associated with increased odds for abusive behavior (OR, 1.33; 95%CI, 1.07–1.65).

3.4. Characteristics related to each type of abusive behavior

Several differences were observed between psychological abuse (model 5) and physical abuse (model 6) (Table 3). Risk factors associated with only psychological abuse were longer screen time (6+ hours: OR, 1.86; 95%CI, 1.28–2.70), changes of child’s sleeping patterns (OR, 1.47; 95%CI, 1.08–2.00), parents who felt confused by information from the media (OR, 1.35; 95%CI, 1.06–1.71), and parents who had explained the situations to their children in simple terms (OR, 1.54; 95%CI, 1.18–2.01). Risk factors associated with only physical abuse were children with special educational needs (OR, 1.44; 95%CI, 1.07–1.94) and parents who went out for non-essential reasons (OR, 1.85; 95%CI, 1.03–3.34). Limiting exposure to news about the COVID-19 was associated with lower odds for physical abuse (OR, 0.74; 95%CI, 0.59–0.93). Empathy toward the child showed the lowest risks for both of psychological abuse (OR, 0.48; 95%CI, 0.36–0.64) and physical abuse (OR, 0.48; 95%CI, 0.35–0.64).

4. Discussion

This study examined the prevalence of abusive parenting behavior in Japan during the COVID-19 pandemic and its relations with physical, psychological, and social circumstances, and to positive parenting behavior. From the end of April 2020 to the end of May 2020, when over 70% of children could not attend school, approximately 20% of parents exhibited abusive behavior. Under these socially isolated situations, over 80% of parents exhibited positive parenting behavior, including empathizing, allowing children to express their feelings, and maintaining a hopeful attitude.

The increased stress caused by the pandemic had negative effects on parental perceptions, resources, and coping strategies, which in turn affected parent-child interactions and family dynamics (Wu & Xu, 2020). We found that high levels of psychological distress of parents, DV, change in children’s lives, particularly longer screen time (i.e., 6 h or more per day), and non-essential going out of parents were associated with the increased risks of abusive behavior. During the lockdown in the US, DV (also called “intimate partner violence [IPV]”) increased (Mohler et al., 2020) and IPV and depressive symptoms of parents were risk factors for psychological and physical abuse (Nwabuzor Ogbonnaya et al., 2019). Another online survey in the US used a validated scale, the Conflict Tactic Scale Parent-Child version, to measure child maltreatment (Lawson et al., 2020). They reported risk factors similar to the ones reported here, including physical and psychological abuse, parental depression, and job loss. Although we observed statistically significant relations between worsening financial conditions and elevated risk of abusive behaviors in the model 2 (OR, 1.40; 95%CI, 1.18–1.67), the point estimates moved toward the null and the statistical significance was diminished when we added parental psychological distress to the model (model 3: OR, 1.18; 95%CI, 0.98–1.43). This finding might imply that parental psychological distress could mediate the path from the worsening financial condition to the abusive behavior.

Our findings suggested that disruption in the daily activities of children because of school closure, such as longer screen time and changed sleeping patterns, were associated with the increased risk of abusive behavior. Pandemic-related parental stress could trigger verbal/psychological aggressiveness against children, particularly younger children (grade 1–3) (Fig. 1). In particular, excessive screen time itself, such as 6 h or longer per day, was a risk for child abuse despite changes from the pre-pandemic situations. This suggests that providing parents with information and resources regarding positive disciplinary methods, such as how to manage excessive screen time at home and regulate sleeping schedules during school closures, would be beneficial in the time of lockdown. Several recommendations have been published regarding sleep habits (Allen et al., 2020), problematic internet use (Király et al., 2020), physical activities during the lockdown (Jurak et al., 2020), and positive parenting tips (American Academy of Pediatrics, 2020). It will be important and beneficial to disseminate practical information and resources for parents to maintain healthy parent-child relations during the future quarantine period. This study assessed screen time only for leisure and did not include use for studying. The Ministry of Education, Culture, Sports, Science and Technology in Japan reported only 5% of public primary, middle and high schools conducted two-way simultaneous online lectures during the school closure (i.e., in the middle of April 2020) (The Ministry of Education Culture Sports Science and Technology, 2020a). Taking balance between screen time for leisure and online education would be a further consideration even after the lock down because of the current growing needs for online education.

We observed that the relations between special educational needs and risks of physical abuse (OR, 1.44; 95%CI, 1.07–1.94) were stronger than that between special educational needs and risks of psychological abuse (OR, 1.23; 95%CI, 0.91–1.65). Although we did not assess the types or severity of disabilities in these children, they were especially likely to become victims of violence than children without disabilities (Jones et al., 2012). This suggests an urgent need for parents of children with disabilities to be provided tools for managing distress and caregiving burdens during home confinement. One recent study, targeting families with children with intellectual disabilities, reported that the biggest challenge during the pandemic was staying at home. This was particularly true for parents with children having behavior problems (Neece et al., 2020). Remote and timely support services are needed to mitigate psychological, behavioral, and health problems for families of children with disabilities.

An important result of our survey was that several positive parent-child interactions were associated with decreased risks for child maltreatment. For example, showing empathy to the child and helping the child express their feelings could protect the child from possible psychological or physical abuse. Parental empathy is essential for developing a child’s secure attachment to the parent (Stern et al., 2015) and social-emotional competence (Meng et al., 2020). Less cognitive empathy (i.e., poor understanding of the perspectives
of other people) was associated with high risks of physical abuse (de Paúl et al., 2008). Parents open to their children's feelings was also a protective factor for anxiety among youth after traumatic events such as Hurricane Katrina (Costa et al., 2009). Because children experienced emotional distress and difficulties in emotional regulation during the lockdown (Fegert et al., 2020), supportive parenting behaviors are helpful for children to feel secure expressing their feelings and learn how to deal with their feelings and behaviors. Our findings indicated that having a family talk and staying hopeful were also associated with lower risks of child maltreatment. During a crisis, a family's positive attitude and knowledge of communication and problem-solving methods increase trust, mutual respect, and acceptance for differences within the family (Walsh, 1996). Therefore, parenting behavior plays a significant role in developing secure attachment, learning emotional regulations, and problem-solving among children, which would lead to decrease parenting distress as well as abusive behaviors. In addition, limiting media exposure was related with lower risks of psychological abuse, whereas parental confusion feeling toward media was related with higher risks of physical abuse. Media exposure, particularly from television and Web media, was positively correlated with people’s fear and worry about COVID-19 (Sasaki et al., 2020). Therefore, limiting frequency or amount of media exposure under the crisis would be beneficial for protecting mental health of parents themselves as well as preventing child abuse.

To understand who could provide these positive behaviors, we performed multiple logistic regression analyses to examine what kinds of characteristics of children and parents were associated with providing positive parenting behaviors (see Supplementary Table 2). Parents who could not contact people close to them, provide self-care, or did not have enough knowledge about the COVID-19 were less likely to exhibit positive parenting behavior. A recent study using an online survey in the US similarly reported that parenting difficulty due to social isolation during the COVID-19 pandemic was associated with greater risks of child abuse and neglect (Lee, Ward, Lee, et al., 2021). In addition, parents showed a high level of depression and anxiety (i.e., approximately 40% met the criteria of major depression and anxiety) under pandemic and lockdown (Lee, Ward, Chang, et al., 2021). Therefore, providing mental supports for parents, such as information regarding self-care and maintaining social connections, are also meaningful to promote positive parenting behaviors to prevent child maltreatment and increase resilience among family members during the challenging period.

Lastly, our findings showed that explaining the situations to the child in simple terms were associated with elevated risks of psychological abuse, although we, prior to this study, hypothesized that the explanation with simple terms could have lowered the risks of psychological abuse. Unfortunately, we did not assess exactly how parents explained the COVID-19 to the child. Those who responded to “No” to this question might include “explaining with not child-friendly words” or “not explaining at all”. For example, we did not examine whether conversations between parents and children were one-sided (i.e., the parents talked and did not listen the child's thoughts or parents did not ask the child what he/she wanted to know), or whether parents instructed the child on what to do. It is possible that parents were frustrated when they tried to explain the current situations or expectations to their children, because they felt their own anxiety toward unpredictable future at the same time. If children behaved differently than their parents expected or wished after they explained, verbal aggressiveness might evoke. In particular, younger children (i.e., before school age) might have difficulties to understand the expectations and regulate their emotions and behaviors. We stratified children as two age categories (early childhood vs. middle/late childhood & adolescent), then conducted an additional analysis to examine interactions between explaining and psychological abuse (as shown in Supplemental Fig. 1). We observed that parents of children before school age had higher risks of psychological abuse when they tried to explain the child with easy words (OR, 1.73; 95%CI, 1.21–2.48; For school-age children/teenager, OR, 1.23; 95%CI, 0.82–1.84; Pinteraction = 0.092), although these estimates were statistically imprecise with wide confidence intervals. Therefore, supports for parents of younger children is needed how to talk with children so that both parents and children could handle the stressful circumstances. A child rights-based approach is needed to mitigate negative effects on children even under these stressful situations. These would include protecting children from harm, informing and listening to the child, and providing the opportunity to take part in the discussion (Raman et al., 2020). Several suggestions concerning how to talk to children about the COVID-19 pandemic have been made, including practical examples at different developmental levels (Academy of Child & Adolescent Psychiatry, 2020; Center for the Study of Traumatic Stress, 2020; Centers for Diseases Control and Prevention, 2020). Families must be provided with practical information on how to establish positive parent-child interactions so that child maltreatment is prevented, and child well-being is ensured.

Strengths of this study include the relatively large sample size and the fact that the survey was performed while home confinement was required in Japan. Several limitations also exist. First, this study was conducted through SNS and online media platforms. It may not have reached parents who were not interested in their child's well-being or had difficulties accessing resources and information. We also could not obtain detailed information about socioeconomic status (e.g., household income). More studies are needed to ensure that the results are representative of child maltreatment in Japan. Second, although abusive and positive parenting behaviors were reported anonymously, parents might have underreported these types of behavior due to social-desirability bias. The questionnaire asked abusive behaviors from adult family members; therefore, it might include abusive behaviors from parents or non-parent adult members. We could not include validated measurements because of limited space in the questionnaire or obtain objective measurements such as the number of reports to Child Protection Service (CPS), hospital admissions due to child abuse and neglect, or observational assessments of parent-child interactions. Because official reports to CPS could have been underreported during school closures, further research thus is needed to produce validated measurements of abusive or neglectful behavior during the quarantine period. Even though this study used parental reports of abusive behavior, previous meta-analysis reported that computer-based self-administered survey was associated with more reporting of socially unreliable behavior (i.e., substance abuse, delinquency, victimization) than paper-based self-administered survey (Gnambs & Kaspar, 2015). Therefore, online survey has a possibility for parents more likely to disclose abusive behavior which is anonymous and responded alone. Future research is needed to include multiple assessments of child abuse, such as parental-reports, child reports, reports from professionals as well as CPS records. Third, we conducted a cross-sectional study during a state of emergency in which social situations could change rapidly. Even after the state of
emergency is resolved, the level of restrictions and stressors in the lives of families likely will vary. Variations in the rate of COVID-19 spreading or in local or national policies might also affect our conclusions. Lastly, due to the nature of cross-sectional study, caution is needed for interpreting our results especially for temporality and causality, suggesting the requirement for well-designed cohort studies. A longitudinal study is needed.

5. Conclusion

This survey found that the COVID-19 pandemic dramatically changed the lives of children and families. Changes in sleeping patterns, the mental health of mothers, and the occurrence of domestic violence were related with an increased risk of child abuse. In contrast, positive parenting behavior, especially empathizing the child, showed protective relations with abusive behaviors. We cannot overstate the importance of positive parenting behavior in preventing child maltreatment during these challenging times.

Declarations of competing interest

None.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.chiabu.2021.105212.

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