

## Children's Emotional During Learning at Home in COVID-19 Pandemic in Malang

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### Abstract

The government policy of nationwide school closure to minimize the spreading of COVID-19 has affected over 80 million students in Indonesia during 2020-2021. Understanding their emotions is essential because of their vulnerability, but it is still lacking in Indonesia. This study aimed to investigate emotional symptoms among children during learning at home. A cross-sectional online survey of 102 parents with children aged 6-18 years and their children who are learning at home. The survey was conducted in February 2021 in Malang, East Java province, Indonesia. Demographic information, emotional symptoms, and level of knowledge were assessed with a Strengths and Difficulty Questionnaire (SDQ). This research showed the rate of emotional problems among children is low and there is no relationship between the children's age, education level, and knowledge level with the emotional symptoms in children ( $p > 0,05$ ). The abnormal emotional symptoms are higher in middle school compared to other level schools and higher in children aged 13-18 years old compared to 6-12 years old. The rate of emotional problems among children 6-18 years old is low, but this is essential to investigate because children are one of the vulnerable groups and older students are more likely to experience emotional symptoms.

**Keywords:** children, emotional symptom, knowledge, learning at home

### Abstrak

Kebijakan penutupan sekolah secara nasional dari pemerintah ditujukan untuk meminimalisir penyebaran COVID-19 yang telah menjangkit lebih dari 80 juta siswa-siswi di Indonesia di tahun 2020-2021. Sangat penting untuk dapat memahami masalah emosional mereka karena kerentanan mereka, tetapi masih jarang diterapkan

di Indonesia. Penelitian ini bertujuan untuk mengetahui gejala emosional pada anak-anak selama belajar di rumah. Survei cross sectional secara daring dilakukan terhadap 102 orang tua dengan anak-anak berusia 6-18 tahun dan anak-anak mereka yang belajar di rumah. Survei dilakukan pada Februari 2021 di Malang, Provinsi Jawa Timur, Indonesia. Informasi demografi, gejala emosional, dan tingkat pengetahuan dinilai dengan Kuesioner Kekuatan dan Kesulitan (SDQ). Penelitian ini menunjukkan bahwa tingkat masalah emosional pada anak-anak terbilang rendah dan tidak ada hubungan antara usia anak-anak, tingkat pendidikan, dan tingkat pengetahuan dengan gejala emosional pada anak-anak ( $p > 0,05$ ). Tingkat gejala emosi abnormal lebih tinggi pada sekolah menengah pertama dibandingkan dengan sekolah tingkat lain dan juga lebih tinggi pada anak-anak berusia 13-18 tahun dibandingkan dengan 6-12 tahun. Tingkat masalah emosional pada anak usia 6-18 tahun memang rendah, tetapi hal ini penting untuk diselidiki karena anak-anak adalah salah satu kelompok yang rentan dan anak dengan usia lebih tua lebih besar kemungkinan mengalami gejala emosional.

**Kata kunci:** anak-anak, gejala emosional, pengetahuan, belajar di rumah

## INTRODUCTION

The COVID-19 pandemic caused by the SARS-CoV-2 virus is a challenge for all countries in the world (Christner et al., 2021a), including Indonesia because it affects all aspects of our society in terms of economy, public health, and daily lives (Suryani et al., 2021). The government has made various efforts to reduce the infection rate such as extensive restrictions on public life (Ma et al., 2021). Events and activities involving many people are prohibited, shopping centers and recreation areas are closed and workers in non-essential sectors are expected to work from home. On March 24, 2020, China implemented a strict domestic quarantine policy that has been proven effective in reducing new cases of infection (Liu et al., 2020). In Indonesia at the end of March 2020, public health emergency status was announced through Presidential Decree No. 11 of 2020 and the Indonesian government implemented large-scale social restrictions (*Pembatasan Sosial Berskala Besar*) in cities and provinces in addition to regional quarantine (Trisandy et al., 2021). The government also recommends Stay at Home for all Indonesian citizens (Setiati & Azwar, 2020). In addition, the governments enforce physical distancing, that is, keeping physical distance from others from different households (Christner et al., 2021b).

In the education sector, the government ordered nationwide school closure as an emergency measure to minimize the risk of spreading and began to move teaching online (Christner et al., 2021b; Ma et al., 2021). According to The Ministry of Education, Culture, Research, and Technology (MOEC), it is estimated that around 68 million students study from home and four million teachers conduct remote teaching

(Indonesia Ministry of Education, Culture, Research and Technology, 2012). The biggest obstacle in most schools in Indonesia for carrying out learning at home is the unpreparedness of schools, students, and teachers for the sudden shift from regular face-to-face classes to online learning because of a lack of internet access, electronic devices, and digital skills (Purwanto et al., 2020; Putri et al., 2020; UNICEF, 2020).

Students from less developed areas with limited resources for online learning at home might impact their mental status because of a sense of falling behind in learning (Qin, et al., 2021). A study conducted in China, on mental health among children during the COVID-19 school closure explained that the most common disorders such as anxiety, depression, and stress (Tang et al., 2020). Children's drive to learn is also influenced by their emotional states. Deeper information acquisition can result from increased motivation and active engagement in the learning process brought about by a favorable emotional state. On the other hand, disengagement brought on by emotional distress may result in less information acquisition. In Indonesia, 80 million children and adolescents Indonesia are facing a widespread secondary impact on their learning (UNICEF, 2021).

Furthermore, the learning at home environment suddenly changed where the role of parents in education for children is more crucial than before and children have to try to adapt to the new learning environment. Children only have their parents around them to support their education and give them new learning experiences (Spinelli et al., 2020). Children are not allowed to play outdoors, contact peers and didn't engage in school activities. Moreover, the children become more clingy, attention-seeking, and dependent on their parents due to the long-term shift in their routine (Singh et al., 2020). This situation has significantly increased the risk of experiencing stress and negative emotions in children. A study in China reported psychological difficulties in children during the COVID-19 pandemic, with fear, clinging, inattention, and irritability as the most severe symptoms for younger children (Spinelli et al., 2020). Understanding their emotions is essential because they were particularly vulnerable because of their limited personal resource. However, studies on children's emotional conditions during this period have not been widely carried out in Indonesia. The current study was designed to assess emotional conditions during learning at home during the COVID-19 Pandemic among children aged 6 to 18 years. This research contributes valuable knowledge about the intersection of emotions, teenage age, and the pandemic's effects on children development, with practical implications for parents and teachers.

## RESEARCH METHOD

We conducted a cross-sectional survey in February 2021 in Malang City, East Java Indonesia. Parents filled out an anonymous online survey, after reading the written consent form and explicitly agreeing to take part in the study. A form containing an online version questionnaire (google form) was distributed online among specific social media groups through WhatsApp comprising parents who have at least one child aged between 6 to 18 years old and who also follow the online education. The questionnaire was self-administered without intervention by the authors or any specific person, and it did not contain any identifying data of the participants to ensure confidentiality. Questionnaires with incomplete information or missing data were excluded from the analysis. The research sample size is determined by the minimum sample size formula of cross-sectional research. Because there was no prior COVID-19 related research to rely on, so  $p=0,5$ ,  $d=5\%$  and population (N) 874.800 and resulted in minimal sample size was 96.

The online survey consisted of three parts: (1) demographics, (2) the children's knowledge about covid-19, and (3) emotional conditions of children. The survey was completed by one parent. The demographic questions referred to information about the parent and children comprised of 13 basic demographic characteristics, such as children's gender, age, their education as well as data about their parent's level of education and age. The children's knowledge about covid-19 assessed use Covid Survey Tool and Guidance(WHO Regional Office for Europe, 2020). The emotional condition was evaluated using a parent report form of the SDQ short version (Strengths and Difficulty Questionnaire). The validity and reliability have been demonstrated result 5 validated questions with Cronbach's alpha score were 0.81. Each question comprises three options ranging from 0 – not true, 1 – somewhat true, and 3 – certainly true. SDQ is a short behavioral screening questionnaire for children aged 3 to 16 which consists of 5 sub-items (emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems, prosocial behavior) and we only use emotional symptoms in this study.

The study was conducted after obtaining approval from the Ethics Committee at the Medical Faculty of Universitas Brawijaya with a number of ethical clearances was No: 113/EC/KEPK/06/2020. The online survey needs approximately 15 minutes to complete. The instructions informed participants about the purpose of the study and participants

agreed to data protection regulations. Next, participants completed three parts of the questionnaire. The first part is about demographics, the second part is about the children's knowledge about COVID-19, and the third part is about the emotional condition of children. At the very end, participants were thanked for their participation.

Descriptive and inferential statistics were calculated using SPSS version 22.0 for Windows. Descriptive statistics analysis was done to demonstrate the demographic characteristics of the participants. Normality tests using Kolmogorov Smirnov show that the data was not normally distributed. Data were analyzed using the *Kruskal Wallis* to analyze the relationship between two variables (parent and child characteristics are correlated with the child's emotional condition). The *Kruskal Wallis* was used because each variable had two and more than two categories. In all the tests, the significance level of  $p$  was set at less than 0.05.

## RESULTS AND DISCUSSION

In total, 162 respondents completed the questionnaire from 13 cities in East Java, and most of them from Malang city (61,9%). AS 40 participants were excluded because they were domiciled outside East Java, had emotional disorders before the pandemic, and were less than 6 years old. In addition, 20 respondents were used to test the validity and reliability of the instrument resulting in 102 participants included in the study. Detailed demographic characteristics of the children and their families are presented in Table 1. The majority of participants are male (52,9%), 6-12 years old (57,8%), and from primary school (52%).

In this study, an SDQ score of 4-6 was used to estimate the prevalence of "borderline" emotional symptoms and a score of 7-10 to estimate of "abnormal" emotional symptoms. This study examined the effects of COVID-19 on the emotional symptoms of children aged 6 to 18 years in East Java Indonesia. Overall, most of the respondents think that their child did not experience emotional problems (87,3%), in contrast, 12,7% experienced emotional problems (8,8% borderline and 3,9% of children had abnormal emotional symptoms). The parents also reported that their children understand the basic knowledge about COVID-19 (87,3%) and 12,7% think that their children don't understand COVID-19 (Table 2).

Five questions related to emotional condition were evaluated using a parent report form of SDQ short version as presented in Table 3. Some children showed emotional

symptoms during "study from home": they feel headaches, stomach aches, or other kinds of pain (4.9%), children often feel anxious or worried about anything and often feel unhappy, sad, or cry (8,8%) and 7.8% feel nervous in new situations and also easily lose confidence. Participants of this study project were asked two questions related to knowledge about covid-19 were asked. The majority of respondents (70,6%) stated that they understand about COVID-19 and 86,3% of children have a good understanding about the regulations and recommendations from the government (Clean and Healthy Living Program, Work from Home, Physical Distancing).

This study also resulted that children's emotional symptoms were not significantly correlated with children's age, school level, and level of knowledge (Table 3 and Table 4). Children aged 6-12 years do not show any emotional symptoms. In contrast, some children aged 13-18 years show emotional symptoms consisting of 9,3% "borderline" category and 9,3% "abnormal" category of emotional symptom. The majority of children who do not understand COVID-19 do not show emotional symptoms (92,3%) and only 7.7% are in the borderline category.

## DISCUSSION

This cross-sectional study examined emotional symptoms among children aged 6-18 years old during Learning at Home during the COVID-19 Pandemic based on a sample from East Java province, Indonesia. Our findings indicated that the prevalence rate of emotional symptoms in children (12.7%) was similar to the research of Qin et al (2020) with 10,5% of respondents reporting psychological distress but this result lower than the study conducted by Xie, X et al in March 2020 (18,9%) (Xie et al., 2020). This is because acute emotional symptoms are usually observed within the first month of a stressful event (Tang et al., 2020), while this research was carried out after more than 1 year of online learning implementation. Therefore children may have started to experience fewer stress symptoms (Tang et al., 2020). Furthermore, the varying prevalence of emotional disorders in children and adolescents during the COVID-19 pandemic could be the result of differences in cultural contexts, methodologies, samples, and measurement of the variables (Qin, et al., 2021). Nevertheless, our finding that more than 12% of children show emotional symptoms needs the attention of parents and clinicians to be able to provide appropriate interventions before these psychological conditions develop into posttraumatic stress disorder (PTSD). This is based on a study on the impact of isolation or quarantine in America in areas severely

impacted by H1N1 causing 30% of children to meet the criteria for PTSD (Tang et al., 2020).

The social restrictions policy to reduce the number of COVID-19 causes changes to the learning system from the face-to-face learning process to learning at home. Implementing learning from home requires students and teachers to adapt to the new learning process immediately. The children study alone at home without face-to-face interaction with the teacher and classmates (Tang et al., 2020). The social restriction also made children isolated in their homes with the absence of outdoor activities, and interpersonal communication with peers, and their families may suffer economic losses (Qin, et al., 2020). This causes negative psychological effects indicated by anxiety, feeling isolated, and disappointment (Ma et al., 2021). Some researchers described these effects in more detail such as emotional disturbance, depression, stress, low mood, irritability, insomnia, posttraumatic stress symptoms, and attentional deficit (Petretto et al., 2020). Furthermore, the sensational headline news about COVID-19 and exposure to families who continually discuss cases and deaths of COVID-19 may have led triggered worry, fear, and anxiety among the citizens including children (Ma et al., 2021; Qin, et al., 2021). The social restriction also restricted travel and closures of

The Spearman correlation was tested to understand the correlation of age, sex, education level, and level of knowledge with the emotional condition. No association between respondent characteristics (age, sex, education level) and level of knowledge with children's emotional condition. These results were congruent with previous research that risk factors such as the age of the child, the gender of the child, and the occupation of the parents had no effect on the occurrence of emotional problems in children. However, our research is different from the research of Qin et al (2020) which states that the age and gender of the child are related to psychological distress.

In this study, emotional symptoms were found at the primary, middle, and high school education levels. Among of these, the middle school had the highest proportion of abnormal emotional symptoms (17.3%) compared to others that did not have an abnormal category. However, for the borderline category, the highest proportion is at the primary school (7.5%) compared to others. Meanwhile, some children who understand COVID-19 show emotional symptoms in the abnormal category (4,6%), 8,9% in the borderline category but the majority also do not show emotional symptoms.

The abnormal emotional symptoms are higher in middle school compared to others level schools and also higher in children aged 13-18 years old compared to 6-12 years



old (table 3). This is consistent with previous research that children in middle school had better awareness that COVID-19 is highly contagious (Ma et al., 2021). Their awareness is caused they have a better understanding compared to primary school. This is in accordance with the results of the study that children who understand about COVID-19 experience more emotional symptoms than those who do not understand. Moreover, they are more concerned about their education and future plans, in contrast, primary school students are naturally less worried (Ma et al., 2021). This result is different from the research conducted by Qin, Z, et al. (2021). They stated that students who had multiple information sources about COVID-19 were less likely to experience psychological distress because their knowledge may reduce psychological distress (Qin, et al., 2021). The middle school level had a higher prevalence of abnormal emotional symptoms than other higher school levels because the lower school level was more vulnerable because of a limited understanding of the event and coping strategies (Imran et al., 2020).

## **CONCLUSION**

The rate of emotional symptoms (borderline and abnormal category) among children aged 13-18 years old during the COVID-19 pandemic is low. But this is essential to investigate, because of children's vulnerability due to limited personal resources to adapt or cope with the changes that affect their daily lives such as learning at home. Regarding the sociodemographic factors (age and level of education) not related to the emotional symptoms during pandemic, we found that older students were more likely to experience emotional symptoms. One possible reason is that older children were more aware because more understand about COVID-19 and are more concerned about their education and future plans.



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## Table

**Table 1 Demographics Characteristic of the Respondents (n=102)**

| Variable     | Category        | Frequency | Percentage |
|--------------|-----------------|-----------|------------|
| Sex          | Male            | 54        | 52,9%      |
|              | Female          | 48        | 47,1%      |
| Age          | 6-12 years old  | 59        | 57,8%      |
|              | 13-18 years old | 43        | 42,2%      |
| School Level | Pre-School      | 6         | 5,9%       |
|              | Primary         | 53        | 52%        |
|              | Middle          | 26        | 25,5%      |
|              | High School     | 15        | 14,7%      |
|              | Undergraduate   | 2         | 2%         |

**Table 2 Prevalence of Emotional Condition and Level of Knowledge about COVID-19 Among Children 6-18 Years Old**

| Variable            | Category             | Frequency | Percentage |
|---------------------|----------------------|-----------|------------|
| Emotional condition | No emotional Problem | 89        | 87,3%      |
|                     | Borderline           | 9         | 8,8%       |
|                     | Abnormal             | 4         | 3,9%       |
| Level of Knowledge  | Don't understand     | 13        | 12,7%      |
|                     | Understand           | 89        | 87,3%      |

**Table 3 Emotional Symptoms of respondents in Each Question**

| Emotional symptoms | Not true | Somewhat true | Certainly true |
|--------------------|----------|---------------|----------------|
|--------------------|----------|---------------|----------------|

|     |                                                                                                               | N  | %    | n  | %    | n | %   |
|-----|---------------------------------------------------------------------------------------------------------------|----|------|----|------|---|-----|
| ES1 | Children often feel headaches, stomach aches, or other kinds of pain while studying from home due to COVID-19 | 94 | 92,2 | 3  | 2,9  | 5 | 4,9 |
| ES2 | When implementing the home study policy, children often feel anxious or worried about anything                | 64 | 62,7 | 30 | 29,4 | 9 | 8,8 |
| ES3 | Children often feel unhappy, sad, or cry while studying from home due to COVID-19                             | 63 | 61,8 | 30 | 29,4 | 9 | 8,8 |
| ES4 | Children feel nervous in new situations and also easily lose confidence while studying from home              | 74 | 72,5 | 20 | 19,6 | 8 | 7,8 |
| ES5 | Children are afraid of many things and also easier to be afraid while studying from home                      | 80 | 78,4 | 20 | 19,6 | 2 | 2   |

Note: ES = Emotional symptoms

**Table 4 Knowledge about COVID-19 of respondents in Each Question**

| Knowledge about COVID-19 |                                                                                                            | well understand |      | little understand |      | don't understand |   |
|--------------------------|------------------------------------------------------------------------------------------------------------|-----------------|------|-------------------|------|------------------|---|
|                          |                                                                                                            | n               | %    | n                 | %    | n                | % |
| KC1                      | Do children understand and understand about COVID 19?                                                      | 72              | 70,6 | 28                | 27,5 | 2                | 2 |
| KC2                      | Do children know and understand the regulations and recommendations from the government (Clean and Healthy | 88              | 86,3 | 13                | 12,7 | 1                | 1 |

Living Program, Work from  
Home, Physical Distancing)?

Note: KC = Knowledge of Covid-19

**Table 5 Kruskal Wallis Correlation between Demographics characteristic and Emotional Condition among children 6-18 years old**

| Variable     | Category        | Emotional Condition |            |           | p-value |
|--------------|-----------------|---------------------|------------|-----------|---------|
|              |                 | No Problem          | Borderline | Abnormal  |         |
| Age          | 6-12 years old  | 54 (91,5%)          | 5 (8,5%)   | 0         | 0,120   |
|              | 13-18 years Old | 35 (81,4%)          | 4 (9,3%)   | 4 (9,3%)  |         |
| Sex          | Male            | 48 (88,9%)          | 6 (11,1%)  | 0         | 0,511   |
|              | Female          | 41 (85,4%)          | 3 (6,25%)  | 4 (8,3%)  |         |
| School Level | Pre-School      | 6 (100%)            | 0          | 0         | 0,069   |
|              | Primary         | 49 (92,55)          | 4 (7,5%)   | 0         |         |
|              | Middle          | 18 (78,3%)          | 1 (4,4%)   | 4 (17,3%) |         |
|              | High School     | 14 (93,3%)          | 1 (6,7%)   | 0         |         |
|              | Undergraduate   | 2 (100%)            | 0          | 0         |         |

**Table 6 Kruskal Wallis Correlation between Level of Knowledge about COVID-19 and Emotional Condition among children 6-18 years old**

| Level of Knowledge<br>about Covid-19 | Emotional Condition |            |          | p    |
|--------------------------------------|---------------------|------------|----------|------|
|                                      | No Problem          | Borderline | Abnormal |      |
| Don't understand                     | 12 (92,3%)          | 1 (7,7%)   | 0        | 0,44 |
| Understand                           | 77 (86,5%)          | 8 (8,9%)   | 4 (4,6%) |      |