Children's perception of state of emergency caused by the COVID-19 epidemic

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Abstract

Children are a vulnerable group that perceives fear, uncertainty, and physical and social isolation during the Corona crisis, making them miss school and kindergarten for a long time. Understanding their reactions and emotions is key to accordingly satisfying their needs (Jiao et al., 2020). The aim of this paper was to research the children's perception of the state of emergency caused by the Coronavirus, using focus groups of children aged 4 to 6 years old as the method. Qualitative analysis of the results developed the following categories: 1. *Knowledge of the virus*, 2. *Knowledge of preventive measures*, 3. *Communication about the virus*, 4. *Emotions during the epidemic*, 5. *Strategies for dealing with negative emotions during the epidemic*. During the restrictive measures, it is difficult to enter institutions and directly conduct research with very young children, so this research present an important insight into the children's perception of the coronavirus and the time spent isolated from friends and kindergarten.

Key words

children's perception; Corona crises; epidemic; kindergarten children; isolation

Introduction

In January 2020, the World Health Organization (WHO) declared the new coronavirus disease (COVID-19) outbreak an emergency for international public health. The World Health Organization has expressed concern for the high risk of the spread of COVID-19 in countries around the world. In March 2020, the World Health Organization evaluated that COVID-19 can be characterized as a pandemic. The World Health Organization and the public health sectors around the world are involved in preventing the pandemic. However, this time of crisis is stressful for the entire population (WHO, 2020). Pandemics are rare, but they can devastating crises that can influence the lives of many children and their families physically, socially, and psychologically (Sprang and Silman, 2013). One of the vulnerable groups, who had to adjust to the pandemic swiftly, are children and adolescents (Sharma, Majumder, and Barman, 2020). Children are not indifferent to the dramatic effect of the COVID-19 pandemic. They experience fear, uncertainty, physical and social isolation, and may miss school for a long time. Understanding their reactions and emotions is essential to accordingly meet their needs (Jiao et al., 2020). Sprang and Silman (2013) collected data from a sample of 586 parents and their children's psychosocial reactions to the pandemic disasters. In data collection, they used a mixed methodology: questionnaires, focus groups, and interviews. The survey results showcased that a large number of parents (44%) who had been in

quarantine or isolation reported their children as not needing mental health care services, while the rest of the parents (33.4%) reported that their children started to use mental health care services connected to their own experiences during or after the pandemic. The most frequent diagnoses for these children were acute stress disorder (16.7%), adjustment disorder (16.7%), and grief (16.7%).

An early study of behavioral and emotional reactions of Chinese children during the COVID-19 epidemic was conducted in the Chinese province of Shaanxi. Given the restrictive measures of movement brought by the Chinese government to stop the further spread of COVID-19, parents filled out an *online* questionnaire about their children's behavioral and emotional responses to the epidemic. The survey results of a sample of 320 children aged 3 to 18 years old showcased excessive parental attachments, distraction, irritability, and fear of asking questions about the epidemic as the most common behavioral and emotional problems. Furthermore, the results demonstrated excessive parental attachment and angst for possible infection of family members as symptoms more likely to develop in kindergarten children aged 3 to 6 years old (Jiao et al., 2020).

A study conducted on a sample of 1143 parents and children from 3 to 18 years of age, which analyzed immediate psychological effects of COVID-19 quarantine on Spanish and Italian youth, showcased that as many as 85.7% of parents noticed emotional and behavioral changes in their children during quarantine. The most frequent symptoms were concentration difficulties (76.6%), boredom (52%), irritability (39%), restlessness (38.8%), nervousness (38%), feelings of loneliness (31.3%), and worry (30.1%) (Orgilés, Morales, Delvecchio, Mazzeschi, and Espada, 2020).

In their paper, Imran, Zeshan, and Pervaiz (2020) present the most prevalent symptoms of stress in young children during the pandemic. Young children most often exhibit stress in disapproval and irritability, inability to concentrate, as changes in sleep patterns, in waking up during the night, having nightmares, and in various regressive behaviors (such as thumb sucking, not controlling urination, and/or defecation, and demanding to be carried). In conclusion, the authors state that interventions should focus on nurturing resilience in children and adolescents by encouraging structure, routine and physical activity, and better communication to address children's fears and concerns.

The 2020 study titled *How does the COVID-19 pandemic affect the mental health of children and adolescents?,* summarized relevant and available data on the mental health of children and adolescents during the COVID-19 pandemic by analyzing 51 topic-related articles. As expected, results determined different responses to stress in a different developmental stages. Yet, children of all developmental stages showcased a higher rate of depression, anxiety, and posttraumatic symptoms, as would be expected after any highly traumatic occurrence (Marques de Miranda, da Silva Athanasio, Cecília de Sena Oliveira, and Simoes Silva, 2020).

In the United States, a nationwide survey was conducted in June 2020. Given the pandemic, the survey aimed to determine changes in the physical and emotional well-being of parents and their children. The results showed that 27% of parents reported deterioration of their mental health, while 14% reported their children's behavioral problems as worsened. The deteriorated parents' mental health coincided with children's worse behavioral problems in nearly one in ten families (Patrick, Henkhaus, Zickafoose, Lovell, Halvorson, Loch, Letterie, & Davis, 2020).

Quarantine due to COVID-19 has had effects on the lives of most children and adolescents. They replaced friendships and routines of going to kindergarten or school with virtual social meetings and classes. Outdoor leisure was bound to the indoors. Closing-down was imperative to fight the pandemic, but the halt on social contact and the ban of going outside can have immediate psychological effects on children and adolescents. There were some public debates about whether the quarantine will affect children or whether they will be able to adjust to the new environment without excessive emotional strain. Knowledge about the effects quarantine has on the psychological welfare of children would aid professionals in implementing preventive measures (Orgilés et al., 2020).

The World Health Organization (WHO, 2020) defines the current time as an increased stress-and-crisis time, stating that children are expected to be more demanding and needing more attention from their parents. Moreover, the World Health Organization recommends honest and age-appropriate conversations to ease their children's anxiety. Overall, the knowledge base on children's reactions to trauma and disastrous events is expanding, but the descriptions of their reactions during epidemics remain scarce (Klein, Devoe, Miranda-Julian, & Linas, 2009).

Given the previous research on psychosocial, behavioral, and emotional reactions of children during the COVID-19 epidemic – which results, due to the movement-restriction measures implemented to prevent further infection spread of COVID-19, were collected by parents filling out *online* surveys – this paper aims to research children's perception on state of emergency caused by the Coronavirus. This research will use focus groups of children aged 4 to 6 years old as the method, bearing in mind the children's expressed fear of asking questions about the epidemic (Jiao et al., 2020) and the World Health Organization's advice of honest and age-appropriate conversation to alleviate stress and anxiety (WHO, 2020). Focus groups create a safe peer environment for children; the method can help avoid some power imbalances between researchers and participants, such as those between an adult and a child in a one-on-one interview Shaw, Brady, & Davey, 2011). Focus groups not only give researchers a large amount of data on a particular topic in a relatively short time but also encourage discussion and ask participants to explore and clarify their views (Clarke, 1999). It is an increasingly popular research method suitable for collecting data from children, young people, and parents (Adler, Salantera, and Zumstein-Shah, 2019). The goal of effective, or guided, focus groups are to express children's voice and point of view on various topics (Kelly, 2013), and so the goal of the paper is to examine children's perception of the state of emergency caused by the COVID-19 epidemic by the self-representation of participants used in the focus group research method.

Method

Participants

The participants were eight children from a kindergarten in Osijek-Baranja county. Children participated in a guided group discussion, in two focus groups on the 12^{th} and 13^{th} of May 2020, which was the first week in which children could return to the kindergarten after all of them closed down in the Republic of Croatia from 16^{th} of March 2020 to 11^{th} of May 2020. The age of the children ranged from 4 years to 6 years, and on average 5 years old (59 months). Three girls and five boys participated in the focus groups. The sample was convenient.

Procedure

The parents of all participants and participants themselves were familiarized with the objectives of the research and the parents gave written consents. Children were informed of the research aims and were asked about understanding what was explained to them, to which they gave informed verbal consent. Children were informed that they could stop participating in the research at any moment. Both focus groups lasted approximately 20 minutes, led by the research protocol in the kindergarten rooms. At the beginning of the discussion, children received puzzles to play with because some researchers noticed that giving children puzzles during discussions made them more relaxed, prompting them to have better and richer answers to the research questions (Morgan, Gibbs, Maxwell, and Britten, 2002).

The research protocol consisted of nine questions. At the beginning of the conversation, children were asked an introductory question: *Will you talk to me a bit and solve the puzzle?*, and then the transitional question: *Do you know why you haven't been to the kindergarten lately?* Key questions followed: *What is a virus? How can it harm us? Do you know how we get this virus? Can we do something not to get it? Have you talked to somebody about coronavirus? Are there any places you used to go to, but now you cannot because of the virus?* Lastly, the children were asked the final question: *Are you interested in anything else about the coronavirus? You can ask me any question if you want*.

Content analysis results and discussion

The content of the audio recordings was listened to and transcribed using the computer program Nvivo. Qualitative content analysis inductively developed the following categories: 1. *Knowledge of the virus*, 2. *Knowledge of the preventive measures*, 3. *Communication about the virus*, 4. *Emotions during the epidemic*, 5. *Strategies for dealing with negative emotions during the epidemic*. The table shows an example of data organization, and in this way of data analysis, the conversations of the focus groups are concise and structured for a more easy interpretation.

Results

Example of data organization 1

The original text and coding unit determination	Type 1 codes Keywords	Type 2 codes Dimensions	Type 3 codes Categories	Type 4 codes Areas
It's a disease in the city…in all cities. *I could get infected, be sick and go to the hospital.*	Pandemic Infection, medical intervention	Infectious disease, hospitalization	Perception of the COVID-19 virus	Knowledge of the virus

We have to protect ourselves, be at home. *That we are at home, and I have disinfectants in the car and at bed.* *We have to wash our hands.*	Protection Hygiene, disinfection Hygiene habits	Non-exposure to the virus, hygiene habits	Perception of the preventive measures	Knowledge of the preventive measures
I talked to my mom and dad a little bit, they say you shouldn't go out during Corona. *Yes (I talked), with mom, dad, grandma and grandpa.* *Kristina (kindergarten teacher) talked about it.*	Conversation with the parents, information Conversation with parent and family Kindergarten teacher’s information	Informative conversation in the family and kindergarten	Gathering information through conversation	Communication about the virus
I was sad because I couldn’t go outside. *I was sad because I didn’t go to kindergarten and I didn’t cry.* *I was bored (and) then I played.* *...* *I didn't play, I watched movies* *...* *and I (played) with puzzles* *...* *I (played) with horses* *...* *I watched 99 movies*	Sadness, inability to go out Sadness, inability to go to kindergarten Boredom Game Movie Puzzles Toy horse Movie	Sadness and boredom due to the impossibility of going out Play and media	Experiences of one's own feelings during an epidemic Experience personal coping strategies with negative emotions	Emotions during the epidemic Strategies for dealing with negative emotions during the epidemic

Knowledge of the COVID-19 virus

A telephone survey, conducted from April to May 2020 on a sample of 241 children aged 10 to 17 years old, obtained the following results. All of the children did know about coronavirus, but only half (57%) knew that it was a virus that can cause serious illness. This raised concern given the fact that COVID-19 is a highly infectious virus. The survey results were surprising because they

showcased that children of rural areas (61%) knew more about the virus than the children of urban areas (53%) (Sithon, 2020).

In this study, all eight children were familiar with coronavirus – they knew that they did not go to the kindergarten due to its outbreak and showed knowledge that the virus is in the whole world: *It's a disease in the city…in all cities.* Additionally, as it was noted in the aforementioned research in which the children perceived the virus as dangerous (85%), this research as well reported children perceiving the virus as highly dangerous: *I could get infected, be sick, and go to the hospital.* Furthermore, children knew that the virus is infectious to both children and adults, and some even mentioned pets.

Researcher: *Tell me, can this virus infect children?*

Girl: *Yes, kitties too.*

Researcher: *What do you think, for whom the virus is the most dangerous?*

Girl: *For a little baby.*

Researcher: *Do you think that it is more dangerous for a little baby or grandmas and grandpas?*

Boy: *For grandmas and grandpas.*

Knowledge of the preventive measures

In this study, children listed several preventive measures. For instance, they listed staying at home, that is, minimizing the risk of infection: *We have to protect ourselves, be at home.* Apart from not being exposed to the virus, children noted hygiene habits and disinfectants: *That we are at home, and I have disinfectants in the car and at the bed.; We have to wash our hands.*

In research from Cambodia (2020), the majority of the children (99.2%) listed hand-washing and then mask-wearing (80.1%) as a preventive measure (Sithon, 2020). In this research, no child listed mask-wearing as a preventive measure against coronavirus, however, according to the recommendations of the Croatian Institute of Public Health, children from kindergarten children after the second year to early-school years are not obligated to wear masks. Appropriately, these children do not even perceive them as a preventive measure.

Communication about the COVID-19 virus

Communication with kindergarten children about the infections spread and the explanation of the disease should not only include the simplification of language and concepts but should also take into account children's understanding of cause-and-effect relationships and diseases. From 4 to 7 years of age, children's comprehension is under the influence of magical thinking, characterized by a child's belief that thoughts, wishes, and unrelated actions can cause certain events. For example, a child can believe that specific thoughts or behavior can cause illness. Adults have to be aware of children's developmental stages and be careful in explaining diseases so children would not unjustly blame themselves or feel as if the disease is a punishment for their misbehavior (Edwards

and Davis, 1997). Thus, listening to children's perceptions and beliefs about COVID-19 is crucial to provide them an accurate explanation that they can understand without unnecessarily feeling guilty or scared (Dalton, Rapa, and Stein, 2020). In this research, and regarding communication and information about coronavirus, children state their conversations with primary caretakers, relatives, and kindergarten teachers: *I talked a little with mom and dad, they say you shouldn't go out for the corona.; Yes (I talked), with mom, dad, grandma, and grandpa .; Kristina (kindergarten teacher) talked about it.* In a study by Sithon (2020), the majority of the children reported social media and news as primary sources of coronavirus information, while fewer children reported their families. Given the age of these research participants, it is logical to assume communication with caretakers and family as a primary source of information because they are not yet able and not being age-appropriate for them to collect information from news or social media.

Emotions during quarantine

Long periods of quarantine can cause an increase in anxiety, fear of infection, frustration, boredom, isolation, and insomnia in children (Roccella, 2019). Children are vulnerable to the emotional effects of traumatic events, especially those that result in the closing of schools, social distancing, and house quarantines (Lubit, Defrancisci, and Eth, 2003). From statements of children in this study, it is evident that children articulated their emotions regarding the restrictive measures: *I was sad because I couldn't go outside.; I was sad because I didn't go to kindergarten but I didn't cry.* Time of COVID-19 pandemic is a very unusual time for humanity, but especially for children that had to face huge life changes during the Corona crises. In the line of preventive measures, schools and kindergartens were closed down, which deprived children of a sense of structure, routine, incentives provided by educational institutions, and the feeling of social support from peers, educators, and school teachers. It is very likely that in this time, children will feel concerns, anxiety, and fear, i.e. types of fear often felt by adults, which include fear of death, fear of relatives dying, and fear of receiving medical help. As stated on the World Health Organization's website (WHO, 2020), all of this contributes to the potential threat to mental health and children's psychological resilience during the pandemic. These exact fears were felt by children in this research, as it is evident in a statement of a four-year-old boy: *I missed my grandparents because I didn't go to them because I was afraid I would infect them if they didn't die.* This sentence showcases that extremely young children felt fear of infection and death while experiencing the new normal in which they missed their loved ones whom they otherwise often saw. In addition to the fear of death, it could be observed that the children are worried about stopping the virus and that they are aware that the time of Corona crises could last.

Researcher: *Do you think coronavirus is gone, and won't come back?*

Boy 1: *But, they said that it will, during fall.*

Girl 1: *No, during winter*

Girl 2: *It passed a little.*

Researcher: *It passed a little, but it'll come back?*

Boy 1: *Yes, but during winter, it won't come back during summer. I guess Corona will go all the time now.*

Boy 2: *It will never pass.*

Strategies for dealing with negative emotions during the epidemic

From the statements of the children in this research, it is noticed that they listed playtime as leisure time during quarantine: *I was bored, so I played.* Naturally, this is not surprising, given that in play children test various states, moods, and emotions. Play is seen as a form of "emotional hyperventilation." In the play, through "emotional hyperventilation," children play with feelings of fear, anxiety, and abandonment (Wood, 2010). Play is exceptionally important in a life of a child because it is more than just fun. It is a valuable part of the intellectual, social, and emotional development of the child (Petrović-Sočo, 1999), and so in times of crisis, play can help children deal with stress, anxiety, and crisis-related trauma (Chatterjee, 2018).

Graber et al. (2020) reviewed the works related to the effect of the quarantine and restrictive measures on child's play and health well-being. They identified the following topics that relate to child's play during restrictive measures: play availability, frequency of play behaviors, play as a means of expression, play as a support of social cohesion, play as a means of coping with stress, and skill development game. These authors state that it is precisely the play that could encourage coping with stress, expression, sociability, and skills development during periods of isolation or quarantine.

Conclusion

Children are a vulnerable group that experience fear, anxiety, uncertainty, and physical and social isolation during the Corona crises and may miss school and kindergarten for a long time. Understanding their reactions and feelings is indispensable to meet their needs (Jiao et al., 2020). With this information in mind, by using the qualitative research method of focus groups, this research aimed to comprehend children's perception, experience, emotions, and knowledge relating to coronavirus, restrictive measures, and the new way of life that the pandemic requires. At the time of restrictive measures, it is troublesome to enter institutions and conduct research directly with very young children, so this research provides paramount insight into children's perceptions of coronavirus and time spent in isolation from friends and kindergarten. In the future, it would be interesting to research a larger sample of children using a mixed methodology. Research of kindergarten children with current experiences and events may not be repeated, so such research must promptly be designed to understand the comprehension, knowledge, and fears of kindergarten children and respond accordingly in the future state of emergencies. Retrospective research of such situations is not so reliable because children may not be able to recall their experiences related to a particular topic of research.

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Dječje percepcije izvanrednog stanja izazvanog epidemijom COVID-19

Sažetak

Za vrijeme koronakrize djeca se mogu suočavati s osjećajima straha, neizvjesnosti te fizičke i društvene izolacije zbog propuštanja škole ili vrtića. Razumijevanje njihovih reakcija i osjećaja ključno je za pravilno zadovoljavanje njihovih potreba (Jiao i sur., 2020). Cilj ovog rada bio je istražiti dječje percepcije izvanrednog stanja izazvanog koronavirusom, a kao metoda korištene su fokus-grupe s djecom od 4 godine do 6 godina. Kvalitativnom analizom sadržaja razvijene su sljedeće kategorije: 1. *Znanja o virusu*, 2. *Znanja o preventivnim mjerama*, 3. *Komunikacija o virusu*, 4. *Osjećaji za vrijeme trajanja epidemije*, 5. *Strategije nošenja s negativnim emocijama za vrijeme trajanja epidemije.* U vrijeme restriktivnih mjera teško je ući u ustanove i neposredno provoditi istraživanja s vrlo malom djecom, stoga ovo istraživanje daje važan uvid u dječje percepcije o koronavirusu i vremenu provedenom u izolaciji od prijatelja i vrtića.

Ključne riječi

djeca predškolske dobi; dječje percepcije; epidemija; koronakriza; izolacija

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