Factor Related to Anxiety Among Parents of Children Under Five Years of Age During COVID-19 Pandemic

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Abstract. The COVID-19 pandemic outbreak emerged and caused a crisis in various sectors. Widespread local quarantine is done as an effort to stop the spread of the virus. This may be particularly difficult for parent who have children as a vulnerable group especially children under five years of age, because playing and interaction is necessity to achieve optimal growth and development. Therefore, Parents somewhat dealing with those adversity may experience psychological problem such as anxiety. This study aimed to determine factors related to parent anxiety during COVID-19 pandemic. A cross-sectional study conducted among parent of children under five years of age during COVID-19 pandemic period. A total 92 participants Were involved in this study. This study assessed parent anxiety using Hamilton Anxiety Rating Score Scale (HARS), social support using The Multidimensional Scale of Perceived Social Support (MSPSS), history of COVID-19 in family, and socioeconomic status in family. The prevalence of parent anxiety, high perceived social support during COVID-19 pandemic, history of COVID-19 in family, was 67,4%, 37%, and 55,4%, respectively. Multi-variable logistic regression analysis showed that parent education (OR = 11,1; p = 0,032) and perceived social support (OR = 118,9; p = 0,000) was the higher risk factor of parent anxiety during COVID-19 pandemic. Our finding showed high prevalence of anxiety among parents. Low perceived social support and parent with lower education are more likely to experience anxiety. Meanwhile perceived social support during local quarantine was in higher condition. This study suggests that psychological health among parents of children under five years old need to be concerned by multi-sector intervention such as health care provider, local government, and family involvement. Parents psychological health will affect children growth and development.

Keywords: Anxiety · Children under five · COVID-19 · Pandemic · Parent

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1 Introduction

At the end of 2019, the world was shocked by the emerging of novel Coronavirus called Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) which caused Corona Virus Disease-19 (COVID-19). COVID-19 spreads quickly all over the world. On March 11, 2020, the world health organization declared COVID-19 as a global pandemic outbreak [1]. The ongoing two years of pandemic, the condition may vary because of the virus mutation. The evolution of SARS-CoV-2 was marked by its mutation, including in the context of 'variants of concern', viral characteristics, also its transmissibility and antigenicity could occur in response to immunology system adaptation of human populations [2]. Until November 2021, the latest mutation called the Omicron variant was first appeared in Africa. WHO declared the Omicron as a variant of concern due to its higher transmission rate than the previous mutation (delta variant). Indonesia is one of the developing countries affected by the COVID-19 pandemic. COVID-19 first confirmed in Indonesia in March 2020. Ministry of Health in Indonesia declared COVID-19 as a public health emergencies and non-natural disasters caused death, and large economic damage [3]. In November 2021, the Indonesian government reported a total of 4,249,323 confirmed cases of COVID-19, 143,592 deaths due to COVID-19 and 4,096,194 people declared cured.

Transmission of SARS-CoV-2 in humans occurs through droplet spray, fomite transmission (contact) and aerosol [4]. Due to the rapid transmission and high virulence, various efforts have been made to reduce the incidence of disease and reduce mortality or what is known as "fatten the curve" strategy. In response to 'flattening the curve', governments have imposed border closures, travel restrictions and local quarantines [5]. The Government of Indonesia has established a policy for the Implementation of Community Activity Restrictions (PPKM) with various levels depending on the incidence of events in an area to prevent the spread of viral infections, especially in Java and Bali as the islands with the highest number of population and the highest mobility in Indonesia.

The crisis situation resulted in huge economic damage, health problems, changes in family functions and activities due to local and regional quarantine. Furthermore, psychological problems occur not only in adults but also in children. One third of Indonesia's population are children. This equates to around 85 million children, the fourth-largest of any country in the world [6]. This large number shows that COVID-19 has a broad impact on children in Indonesia. National data in Indonesia shows that cases of COVID-19 in children aged less than 18 years are 12.6% of the total confirmed cases of positive COVID-19 [7]. The Case Fatality Rate (CFR) of Covid-19 in children in Indonesia is 1.4 with the highest mortality rate due to COVID-19 in the case of children aged 10–18 years (26%) [8].

Many children in Indonesia experience poverty and marginalization. The difficulty of accessing an adequate health system makes them vulnerable in crisis situations due to the pandemic. Prior to the COVID-19 situation, Indonesia had experienced a triple burden of malnutrition. High prevalence of stunting around 30.8%, micronutrient deficiencies, especially anemia in adolescents, and obesity became risk factor of COVID-19 severity in children. This triple burden is an emergence of a critical situation during the COVID-19 Pandemic. Malnutrition and malignancy are the two most common comorbidities in children with COVID-19 in Indonesia [8]. This is related to the high prevalence

of malnutrition in children in Indonesia. Malnutrition puts children at higher risk of infection due to reduced immunity compared to healthy children, especially in children under five years of age.

A study showed that the causes of death in children with confirmed COVID-19 were respiratory failure (54.4%), sepsis and septic shock (23.7%), meningitis-meningoencephalitis (12.2%), and preoperative complications (3.2%) [8]. Local quarantine due to COVID-19 is widely carried out as an effort to stop the spread of the virus. This situation may be very difficult for parents who have children as a vulnerable group especially children under five years of ages where playing and interacting is a necessity to achieve optimal growth and development especially in social and communication skills. At the same time, society experiences a high burden of mental health conditions and parents face difficulties due to sudden changes that can experience psychological problems. Research shows that during the pandemic, there is an increase in the negative impact felt by parents [9]. These impacts include anxiety, stress, and symptoms of depression felt by parents during regional quarantine [10].

Anxiety is a universal emotional reaction as a physiological reaction to stressful situations faced by a person [11]. Anxiety is characterized by symptoms that are felt physically and psychologically. If left untreated, anxiety can develop into an anxiety disorder that is both physically and psychologically pathologic. Prior to the emergence of the COVID-19 pandemic, anxiety disorders were a major cause of the global health burden, with mental health systems in most countries under-resourced and disorganized, despite evidence that effective prevention and intervention tools exist for treating anxiety disorders [12]. The impact of the COVID-19 pandemic on families, especially parents of children under five, is felt from various aspects of life and can be a stressor for the family. This condition makes parents vulnerable to psychological problems, namely anxiety.

This study aimed to determine the factors associated with anxiety in parents of children under the age of five (toddlers) during the COVID-19 pandemic. Identification of risk factors and protective factors related to anxiety can be used as an effort to determine the mental health of parents and factors related to it.

2 Methods

Quantitative method with a cross-sectional design was done in this research. Population of this study were parents of children aged 0 to 60 months or under the age of five years. This research was conducted in October–November 2021 involving 92 respondents from parents (mothers) who were selected using a simple random sampling technique. The inclusion criteria for sampling were parents of children aged 0 to 60 months (toddlers), able to communicate, and willing to be research respondents, and filling out questionnaires. Data collection techniques in this study used primary data obtained by questionnaires. Parents' anxiety was measured by the Hamilton Anxiety Rating Scale (HARS) questionnaire, family support was measured by The Multidimensional Scale of Perceived Social Support (MSPSS) questionnaire, family history of COVID-19 and socioeconomic status was measured by demographic data questionnaire. The dependent variable of this study is parental anxiety. The independent variables measured in this study were social support, family history of experiencing COVID-19, education level,

and employment status. The researcher made an informed consent that respondents were willing to participate in the study and were asked to fill out a questionnaire. Data analysis was done by univariate, bivariate, and multivariate. Univariate analysis in the form of frequency distribution and percentage of each variable. Bivariate analysis for variable selection was carried out by chi square test data analysis, and multivariate analysis was carried out by multiple logistic regression data analysis.

3 Results

In this study, there were 92 respondents met the inclusion and exclusion criteria. Table 1 shows the results of a univariate analysis of the level of anxiety in respondents based on a family history of COVID-19, education history, employment status, and perceived social support.

Bivariate analysis was used with the chi square test to determine the relationship between family history of COVID-19, education history, work status, and social support with anxiety levels in parents of children under five years of age. Table 1 showed that there is a relationship between family history of COVID-19, education history, work status, and social support with the level of anxiety indicated by a p value < 0.05.

The results of the multivariate analysis were carried out by selecting the variables first. Variables that become candidates for the multivariate model are independent variables with p value < 0.25 in the bivariate analysis shown in Table 1, which is family history of COVID-19, education history, employment status, and social support. Multiple logistic regression statistical test was used. The results of the multivariate test, selected the last model shown in Table 2. The results show the consistency of the significance of the statistical test (p value) and clinically (OR value). Table 2 shows that social support is a determining factor related to the level of parental anxiety indicated by OR = 106.14 and p-value = 0.000. The results of R2 show 0.816, which means that the relationship between social support and parental anxiety levels of children under the age of 5 years (toddlers) can predict parental anxiety levels as much as 81.6% while 18.4% is caused by other factors.

Table 1. Variable Frequency Distribution Results And Bivariate Analyses (N = 92)

Variable	Category	Anxiety Level						Total		p-value
		Low		Moderate		Severe				
		f	%	f	%	f	%	f	%	
History COVID-19 in family	Yes	4	7,8	31	60,8	16	31,4	51	100	0,000
	Never	27	65,9	14	34,1	0	0	41	100	
Education level	Low	3	7,9	23	60,5	12	31,6	38	100	0,000
	Intermediate	7	29,2	15	62,5	2	8,3	24	100	
	High	21	70,0	7	23,3	2	6,7	30	100	
Employment status	Un-employment	16	24,2	36	54,5	14	21,2	66	100	0,012
	Working	15	57,7	9	34,6	2	7,7	26	100	
Social support	Intermediate	1	1,7	41	70,7	16	27,6	58	100	0,000
	High	30	88,2	4	11,8	0	0	34	100	

Social support	Intermediate	1	1,7	41	70,7	16	27,6	58	100	0,000
	High	30	88,2	4	11,8	0	0	34	100	

Table 2. Results Of Multivariate Analysis Of Factors Associated With Anxiety Levels Of Parents Of Children Under Five Years Of Age In A Pandemic Period (N = 92)

Variable	B	Sig	OR CI 95%	R^2
Education Level	- 2,448	0,048	0,108 (0,12 – 0,976)	0,816
Social Support	4,665	0,000	106,14 (10,33 – 1090,192)	
History of COVID-19	- 1,906	0,091	0,149 (0,016 – 1,353)	
Constant	1,605	0,250	1,976	

4 Discussion

Results showed majority parents of children under five years of age experienced anxiety (67,4%). According to previous research, during COVID-19 pandemic parents develop mental health problems, including depression, anxiety and emotional problems [13–15]. The relationship between COVID-19 infection and symptoms of mental disorders is actually quite complex. Parent experienced anxiety not only because disease risk but also prolonged impact on daily activity living both parents and children. During this period, children are more likely to have screen time activity at home such as watching television, gaming, and screen based activities [15]. Other problems are unmet childcare need and lower-quality parenting [16]. Parents awareness of those sedentary behavior risk and closeness with children are very important. Adaptation during COVID-19 pandemic in family function is very important. Prolonged anxiety in parent not only affect to the children but also to the parent itself. High anxiety increases circulating cortisol which has an impact on health, including reduced immunity. That is, having high anxiety or depression makes a person more susceptible to COVID-19 infection [12].

In this study, family history of COVID-19 was related to the anxiety of parents of children under five years old ($p = 0.000$). A history of COVID-19 experienced by family can be a stressor for parents. These stressors are the triggers for parent psychological problems during the pandemic. In the concept of General Adaptation Syndrome (GAS), stress is a non-specific response of the body to stressors that arise, both positive and negative [17] Stressor is defined as the causative agent in the GAS, and stress as a result. Stress in this case is distress that afflicts both physical, emotional, and spiritual conditions that can be a threat to the well-being of those who experience it.

Results showed that the level of education and employment status were related to the anxiety of parents of children under five years old ($p = 0.000$; $p = 0,012$). The education level of parent and employment status somehow indicated family socioeconomic status. Study found that family with lower socioeconomic status experienced higher risk for parental anxiety [18]. Research suggests that parents with higher education will have better insight, their knowledge will develop and progress, and their mental strength will also become stronger in dealing with anxiety, and vice versa. The role of nurses is very important in providing education to parents to overcome anxiety because the need for information is a right for clients in health services. Parents who have a high educational history have better communication with health care providers, and other parents, have better access to information related to treatment, and have a higher sense of control over their child's treatment [19]. Parents with higher education tend to have good coping in dealing with problems that occur in their lives, especially those related

to children, especially in dealing with crisis situations [20]. Pandemic COVID-19 is a critical situation that affect family function. The high level of education in parents makes parents more active in seeking and utilizing available information [21, 22]. Employment status is closely related to family income and family economic status. The family's economic status is a protective factor in the situation of caring for children, one of which is when facing crisis conditions due to the pandemic. Parents who have a stable income will feel security, comfort, and high expectations in providing care for their children.

The results showed that social support was the most influential factor in anxiety ($p = 0{,}000$; ORCI95% = 106,1). In this study, parent perceived high social support (37%). Social support can have a big effect on individual psychological conditions. Social support is a key part of external factors that influence the formation of a person's resilience process [23]. Resilience means that a person's ability to be able to bounce back after facing a crisis condition [24]. Individuals with low resilience will easily experience psychological problems such as anxiety [25, 26]. Individuals who receive high social support will make the individual more optimistic in dealing with life and more skilled in meeting psychological needs and have the ability to achieve what is desired and can better guide individuals to adapt to stress. The social support includes information, material, and emotional which can be the key to the resilience possessed by individuals in facing difficulties in their lives [23]. Therefore, providing social support to parents of children is very crucial to overcome the distress and threats they experience during the process of caring for children to optimize the resilience of parents and all elements of the family in caring for children [27]. Social support is a protective factor for parents as a pillar of defense that can be used when dealing with various stressful conditions encountered while caring for children. This social support can be obtained from various sources, namely life partners, family, friends, or from fellow parents who are in the same condition, and can come from health workers who provide care for children [28].

5 Conclusion

The finding of our study is during COVID-19 pandemic, parents experienced higher anxiety. Family socioeconomic status including education level and employment status both related to parent anxiety. Parent with lower socioeconomic status more likely undergo psychological problem such as anxiety. History of COVID-19 in family also related to parent anxiety. History of COVID-19 in family became a family stressor. Parent worried about disease prognosis and its uncertainty. In our study, family support is the determinant factor related to parent anxiety. Thus, role of family engagement is very important in crisis situation during COVID-19 pandemic. Psychological health among parents of children under five years old need to be concerned by multi-sector intervention such as health care provider, local government, and family involvement. Parents psychological health will affect children growth and development.

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