
THE IMPACT OF COVID-19 ON MUSLIM MOTHERS IN BALI: A CROSS-SECTIONAL STUDY

Asih Sofiah Ningrum

International Open University

ABSTRACT

Muslim mothers in Bali are vulnerable since they are a minority and because of the life-changing conditions due to the COVID-19 outbreak. This study aims to evaluate anxiety levels in Muslim mothers in Bali and to explore factors that impact their anxiety. This is a descriptive study with a cross-sectional design where independent variables are COVID-19 related stressors, and the dependent variable is anxiety. Mothers (n=51) of age 18 and above in Bali were examined by a web-based GAD-7 Indonesian Version questionnaire. Chi-Square and Fisher's Exact Test were employed to find an association between demographic data, COVID-19 related stressors with Anxiety. The data was collected in December 2021 and the result found that there are 33.3% (n=17) of mothers have anxiety symptoms and 9.8% of Muslim families in Bali do not have enough food to fulfill their basic household needs. Among 10 COVID-19 related stressors, having enough food to fulfill basic household needs was found to be statistically associated as a protective factor against anxiety ($P = .037 < .05$ (α); $RR = .35$). In conclusion, this study found that food insecurity during the COVID-19 pandemic is affecting Muslim mothers' anxiety. However, a bigger number of samples would be needed to verify these findings.

Keywords: Anxiety, Muslim, Mother, Minority, COVID-19

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Corresponding author: Asih Sofiah Ningrum can be contacted at a.sofiahn18@gmail.com

1. INTRODUCTION

Wuhan has become a famous city that is hard to forget and inextricably associated with the COVID-19 virus. The reason behind this was that in December 2019, a major health pandemic caused by this virus was reportedly initiated in this city (Zhang & Ma, 2020). This harmful pneumonia rapidly spread to other countries and has led to unprecedented global morbidity and mortality (Gadermann et al., 2021). Due to the rapid global spread and fatal effects of COVID-19, countries around the world issued regulations to prevent the spreading of this disease. General regulations that almost every country agreed on were: wash your hands, wear a mask, stay at home, and physical (and/or social) distancing.

On other hand, physical distancing led to social isolation, and the effect of restriction reported has had a negative impact on the well-being of ethnic minorities in the United Kingdom (Hassan et al., 2021a). Other threats posed by the pandemic were financial and employment insecurity, school closure, housing instability, and changes in accessing health centers (Gadermann et al., 2021). Lifestyles have changed and caused vulnerable new mothers to develop anxiety symptoms (Kimura et al., 2021).

Years ago, people with anxiety symptoms inspired others to initiate the movement for global mental health. The purpose was to close the treatment gap for people who suffers from mental disorders on a worldwide scale and the movement of global mental health became so influential since it rose to prominence in 2008 (Sax & Lang, 2021). As this movement is still influential during the COVID-19 pandemic, studies about mental health as the effect of COVID-19 have been reported worldwide (Kimura et al., 2021).

One of the studies regarding the COVID-19 effect on mental health reported that Black, Asian, Minorities Ethnic (BAME) has increased mental health inequity in many ways because there was restriction for health services and unfulfilled needs from social isolation as well as limited non-essential traveling (Smith et al., 2020). An example of an ethnic minority is the Muslim community in the United Kingdom where they are vulnerable to COVID-19 and they are accused as the reason for COVID-19 spreading (Hassan et al., 2021a).

Indonesia adheres to a democratic system with the largest Muslim population in the world. However, there are some islands where Muslims are a becoming minority. Bali, a Hindu province and an island which has only 13% Muslims in this Island (Badan Pusat Statistik Provinsi Bali, 2018). The island is renowned as a national and international tourist destination, but the COVID-19 pandemic has hit this island seriously. Until April 2020, hotel occupancy was 0-8% due to travel restrictions to Bali

and workers lost their jobs (Musfiroh et al., 2021). This included Muslims most of whom came from other provinces to earn income.

The mother in Islam occupies a remarkable place. By considering the importance of mothers in Islam, as a vulnerable minority group due to life-changing conditions, the focus of this study is the anxiety rate of Muslim mothers due to the COVID-19 outbreak. The effect of COVID-19 will be explored by how COVID-19 stressors are affecting the anxiety levels of 51 Muslim mothers in Bali. The implication of this study is to inform and support mental health among the Muslim community and take care of Muslim mothers.

2. REVIEW OF LITERATURE

One of the first studies regarding the impact of COVID-19 on mental health was conducted by Brooks et al., in February 2020. This literature rapid review explains the psychological impact of quarantine and the results showed that quarantine has had a negative psychological impact (Brooks et al., 2020). The other research followed by a cross-sectional study done by Zhang and Ma (2020) in Liaoning Province, mainland China discussed the immediate impact after one-week lockdown and travel restrictions in Wuhan. It also explained how they were related to the mental health of residents in Jinzhou. The study was administered in March 2020, and it showed that participants had positive mental health-related lifestyle changes.

After about two years, several studies were developed with different types of variables, sample, timing, and methodological design. In this regard, some findings were in contrast with the study in Jinzhou, but other findings showed similarities. Some of the findings will be discussed in the thematic review. This study collected the existing literature related to maternal anxiety during the COVID-19 pandemic, some possible stressors that might cause anxiety, and Islamic literature discussing the pandemic. The literature collected came from various countries, including English and Indonesian.

2.1 Maternal Anxiety as an Outcome

A correlational study was conducted by Gadermann et al. (2021) that mothers are considered as a vulnerable group. Indeed, the most consistent outcome where being a female is related to anxiety (Shahriarirad et al., 2020; Dhaheeri et al., 2021; Zhang & Ma, 2020; Gadermann et al., 2021). Since it has been found that females are prone to anxiety in many countries, biological factors might count as being responsible. Although women experience hormonal fluctuations, not all of them experience anxiety, neuroactive steroid hormones are currently proposed as relevant to anxiety such as allopregnanolone and estradiol; the main form of estrogen (Hantsoo & Epperson, 2017). Low

estradiol levels in women affect the fear of extinction which modulates women being vulnerable to anxiety (Felmingham et al., 2021).

In order to complete the picture, a combination of biological and social factors can increase the risk of anxiety. Milad and colleagues suggested that women were at risk of post-traumatic disorder when a stressful event occurred, and estrogen levels were low during the menstrual cycle (Beck, 2012). A study of female mice showed that childhood social isolation activates peripheral cytokines, neuroinflammation, and blood-brain barrier leading to an increase in anxiety-like behavior (Wu et al., 2022). In addition, delaying biological treatment from the first day of stress could worsen anxiety (Maron, 2017).

From a clinical perspective, mothers in Latin America have higher levels of anxiety compared with fathers during the COVID-19 pandemic (Brik et al., 2022). In a prospective follow-up study from pre to during COVID-19, mothers in Japan have been found to develop (6.6%) new anxiety symptoms due to lifestyle changes (Kimura et al., 2021). However, a correlational study on pregnant mothers in southern Denpasar, Bali showed that only 4% experienced anxiety (Nurtini et al., 2021). This anxiety score is much lower compared to three other findings about pregnant women from other countries (Grumi et al., 2021; Ilska et al., 2022; Lelisho et al., 2022). The percentage of pregnant women with anxiety in southern Denpasar was also much lower than the national anxiety score in Indonesia (20.2%) (Anindyajati et al., 2021).

For the Muslim woman, the risk of anxiety increases by being identified as 'different' from common practices such as wearing veil (Simonovich et al., 2022). Meanwhile, the relationship between Muslims and Bali is claimed to be relatively harmonious (Kartini, 2011; Pageh, 2018). However, the economic sector which began to be dominated by Muslims since the 1970s has caused tensions with the Balinese people to this day (Segara, 2020). Still related to the monetary issue, once Muslim women were in the workplace, they were exposed to ostracism and discrimination leading to a lack of security, fear, decreased job satisfaction, and burnout (Khan et al., 2022).

2.2 Contracting Covid-19 Virus

The first COVID-19 stressor is how to worry about being infected with COVID-19 related to maternal anxiety. The length of the spread of COVID-19 transmission also raised worries as Hassan et al. (2020b) reported how a Muslim in England has been concerned about contracting the virus and infecting others. A scoping review in 2020 found that being a female increased the fear of COVID-19 (Quadros et al., 2021). However, a quantitative study in Japan showed that only 23% of mothers were fearful of COVID-19 being transmitted to themselves or to their family and this was not strongly correlated to their mental health (Kimura et al., 2021).

Mothers in Muslim countries like Saudi Arabia for example were afraid or concerned about their children getting infected by COVID-19 (Meraya et al., 2021). These results can be correlated with how female respondents had greater responsibility as caregivers (Shahriarirad et al., 2020). In Iran, surprisingly, the frequency of people's worries about transferring the virus to their loved ones was higher than the worry about infecting themselves and this finding was associated with anxiety scores (Shahriarirad et al., 2020). This may be because of the emotional burden of witnessing a loved one suffering, not being able to take care of a loved one, and uncertainty can lead to the death of a loved one (Bulut, 2022).

Being susceptible to being infected by COVID-19 can cause anxiety. Muslims in the United Kingdom have reported increasing concern and greater caution during the pandemic due to diabetic conditions (Hassan et al., 2021b). Meanwhile, being female and older in age was also found to be factors associated with a higher risk of developing prolonged COVID-19 symptoms (Bai et al., 2022) and women with the underlying disease also carried a psychological burden (Blix et al., 2021). In general, cardiovascular disease was found to be the factor most prone to causing anxiety (Sayeed et al., 2020). A similar result was shown in research findings during the pandemic in Saudi Arabia showed that being a woman with diabetes was also found associated with anxiety (Alkhormi et al., 2022).

In addition, being unvaccinated also made people susceptible to COVID-19 infection. Unvaccinated mothers in Poland stated that they were worried about the effect of vaccination on mother and fetus, breastfeeding, post-effect, and lack of safety evidence of the vaccine (Lis-Kuberka et al., 2022). A study in the United States discussing the association between COVID-19 vaccination and anxiety was conducted in October 2021. It is not surprising that vaccination was associated with a lower odd of anxiety and no difference in outcomes between gender (Chen et al., 2022). The results also showed that there was an association with an additional higher score of anxiety among ethnic minorities in the United States, such as Asians (Chen et al., 2022).

From within Indonesia, in central Java, anxiety regarding vaccination and the *halāl* status of vaccines was significantly associated with vaccine hesitancy (Utami et al., 2022). A similar result in east Java, anxiety about vaccine side effects and vaccine *halāl* status influenced the perception of the vaccine (Rahmawati & Kristyaningsih, 2022). This is because *Halāl* status is an important issue for Muslims. To support the government, the Indonesian Ulema Council (MUI) claimed that some vaccines administered by the government have *haram* constituents but are permissible due to exigency (redaksi, 2021). Furthermore, Putri et al. (2021) stated that 48,1% of Indonesians experienced anxiety about vaccines and unwillingness to get vaccinated was significantly associated with anxiety.

2.3 Finance

One research study in a Muslim country showed that the decreased income due to COVID-19 was associated with the female gender in Bangladesh (Islam et al., 2021). Moreover, poverty can be traumatic and cause individuals to think of the worst-case scenario for the future. Two studies in Canada showed similar results about the link between financial problems and anxiety. Parental financial problems reported due to the pandemic statistically impacted family anxiety (Gadermann et al., 2021). Higher maternal anxiety scores occurred among mothers with reduced household income than those without (Racine et al., 2021).

Similar results were found in mothers in Japan who also found some concerns about financial problems, and it was related to anxiety (Kimura et al., 2021). In Latin America, low-income families were associated with mother anxiety as well as higher child anxiety (Brik et al., 2022). Meanwhile, the higher economy class in Indonesia did not show a high prevalence of anxiety because financial security might help in preparing for virus infections (Anindyajati et al., 2021). It can be explained that fulfilling financial needs able to reduce anxiety (Livana et al., 2019).

Debt forces individuals to pay, unlike the choice between purchasing or not purchasing something. A systematic review of debt and mental health suggests further research into how debt in/out “trigger events” are comparatively experienced (Fitch et al., 2011). Following this, research concerns into debt due to COVID-19 problems appeared in various research studies. First, 48.7 % of participants in Chile thought that debt in their households would increase for the following three months (Duarte & Jimenez-Molina, 2021). Second, permanent employment and regular income are related to psychological well-being, but economic uncertainty such as debt and job loss are the risk factors that aggravate anxiety (Godinic et al., 2019). Third, parents in Canada who exhibited financial concern (go into debt due to COVID-19) also increased using harsh words with their children in comparison to parents that did not report their financial concerns (Gadermann et al., 2021).

Being in a minority and without enough food can lead to stigmatization. By 2017-2019, food security in Bali was considered safe (Anwar & Nasrudin, 2021). However, a working paper by Ikhsan and Virananda (2021) tried to explain the impact of COVID-19 on food security in Indonesia. The food supply is quite strong, but income and purchasing power were declining which could pose a threat to Indonesia’s food security. In addition, minorities were also found to be less confident about food security over the next four weeks (Morales et al., 2021). Stigmatization of receiving food assistance for those who had enough food previously might have increased anxiety (Fang et al., 2021).

Food insecurity during COVID-19 has been linked to Generalized Anxiety Disorder (Sabião et al., 2022). In the United States, a year-long study among low-income respondents showed that food

insecurity was associated with 257% higher risk of anxiety (Fang et al., 2021). Food insecurity among parents has emerged even though access to the food bank was available (Gadermann et al., 2021). These were the same results as the study before the pandemic. A cross-sectional study of mothers in Egypt during 2017-2018 came with the results that household income was significantly associated with food insecurity and severe food insecurity were approximately 13 times more likely to experience mental distress than mothers with secure food (Mahfouz et al., 2021).

2.4 Children Activity

It seems that being quarantined with dysfunctional family members can have a negative impact on mental health. Ideally, quarantine can be a time to support family members by showing more feelings and assisting one another (Brik et al., 2022). However, due to isolation during the pandemic in Australia, it turns out that too much time together with children can lead to tension by bickering or fighting among family members (Evans et al., 2020). One study proved that dissatisfaction with family support was associated with anxiety (Anindyajati et al., 2021).

In Saudi Arabia, mothers with one child at home were reported to have higher psychological distress than pregnant mothers without children at home (Meraya, et al., 2021). Similarly in Latin America, having more children at home was associated with greater anxiety levels (Brik et al., 2022). A qualitative study asked parents in Australia how COVID-19 impacted their families from March until April 2020. The most interesting phenomenon was “cabin fever syndrome” where parents and children felt trapped in the house and bored with each other (Evans et al., 2020). From an editorial perspective, cabin fever is defined as a combination of anxiety, moodiness, irritability, lassitude, depression, boredom, or feeling of dissatisfaction in response to isolation (Crawford, 2021, p. 167).

Children and electronic screens are not considered a new issue. Many of the effects of screen time on children have been studied before the COVID-19 outbreak. Restrictions on outdoor activity and schooling from home during the COVID-19 outbreak in Bali have been added reasons for children to engage more on screens. Greater screen time may not only affect the children themselves but their parents as well. McCormack et al. (2020) said that parents who are more anxious, have children who spend an average of two hours a day on screens for computing or gaming and less going to the park for physical activity.

During the pandemic, online learning has become one of the highlights of children’s interaction with a screen. The literature review explained that parents’ adjustment to technology and children choosing games over online learning are causes of paternal anxiety (Tirajoh et al., 2021). Supporting these findings, a significant difference in maternal anxiety level was also found based on the mother’s age and education when accompanying their playgroup children to attend online classes (Agusniatih & Nurhayati, 2021). However, a study in Indonesia found that there was no association

between children using the screen during the pandemic and parental anxiety (Tangkuman et al., 2021).

2.5 Islamic Perspective

From the perspective of *fiqh* of disaster, the COVID-19 pandemic is similar to the plague (*Ṭā'ūn*) prophet Muhammad taught the management of this disaster by lockdown or staying at home (Suyadi et al., 2020). Shabana (2021) wrote about ethical questions regarding COVID-19 from several perspectives. First, Islam encourages Muslim to protect themselves and their family in terms of avoiding COVID-19 infection. For example, it is permissible to leave congregational prayers such as Eid Prayer for a valid excuse such as heavy rain, sickness, or fear.

Second, in Shabana (2021), the International Islamic Fiqh Academy stated that the circulation of hoax rumors or inaccurate information causes fear and anxiety. According to al-Ghazali, anxiety is a psychological illness that develops in the heart of an individual with an unhealthy soul and leads to worry about certain things which leads to feelings of restlessness and frustration (Abdullah et al., 2012). Then, faith, as the most significant source of spiritual energy, can be of assistance in overcoming the dangers of COVID-19 by increasing people's confidence in their ability to resist trials and sufferings. In addition, faith shapes a Muslim's perspective about the world and affect their ability to find answers to difficult questions during challenging circumstances (Shabana, 2021, p. 25).

One of the challenging circumstances is financial difficulties during the pandemic. In Islamic teachings, unnecessary debt is discouraged even though the real need for getting debt is permitted. There is ample evidence in the Quran proposing that accumulating debt is a serious problem and should not be initiated except in cases of true necessity (Sipon et al., 2014). Prevention needs to be taken when a Muslim considers taking debt during this pandemic. As Allah said, "*Allah destroys interest and gives increase of charities*" (Quran 2:276).

Research about maternal coping mechanisms during the pandemic from an Islamic perspective was unsatisfying. However, there were studies on Islamic parenting. As parents, teaching the children at home during COVID-19 emerged. Baharuddin (2021) quoted the ḥadith "*There is no greater and more valuable gift from parents to their children than good teaching*". From the ḥadith, Baharuddin advised parents to consider this time as valuable time to express love through parenting and parents are encouraged to ask for help from teachers or others if they have insufficient knowledge rather than giving up completely.

3. RESEARCH METHODOLOGY

3.1 Research Design

This research was an analytical cross-sectional study. It was conducted to describe the frequency of each variable in the sample, and investigate the association between the independent variable which is COVID-19-related stressors, and anxiety as a dependent variable. The confounding variable in this study was not observed and it became the limitation of this study. In this quantitative design, a questionnaire was used. The nonprobability sample was recruited by convenience sampling method.

3.2 Measurement

The tools of the survey were divided into 3 sections (pages) in one Google Form: a demographic questionnaire, a questionnaire to measure COVID-19-related stressors made by the author, and a Generalized Anxiety Disorder 7 (GAD-7) Indonesian Version. Since the questionnaire was web-based, respondents did a self-administered questionnaire. The demographic questionnaire consisted of respondents' initial, gender, age, religion, education level, marital status, employment status, number of children at home, and the duration of residence in Bali.

The COVID-19-related stressors questionnaire was in Bahasa Indonesia containing 10 questions and each question consisted of 2 answer options: "yes and no". The questions included their worry about contracting COVID-19, finance, and child activity. The questions were available in the appendix. A pilot study was conducted among 30 samples with the same criteria. In order to reveal the inter-rater reliability of COVID-19-related stressors, it used Kuder Richardson (KR) 20. KR 20 was used because the questions consist of nominal answers (yes and no). the result appeared in the table below.

Table 1: Reliability of COVID-19 related stressors questions

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized item	N of Items
.613	.555	10

GAD-7 Indonesian version is a standardized instrument with Cronbach's Alpha .867 for 7 items of question. Validity coefficient of .648 to .800 ($p < .01$) and cutoff value > 6 were coming from patients with epilepsy (Budikayanti, et al., 2019). And Internal reliability with McDonald's Omega .809 was coming from general populations (Onie et al., 2020). A cutoff value > 6 was used carefully since this

was the only cutoff value available from reliable literature. The respondents had been asked to rate each question according to their condition in the last 14 days. The rate on GAD-7 was the Likert scale. Start from 0 (not at all) to 3 (nearly every day) (Onie et al., 2020).

Table 2: Reliability of GAD-7 Indonesian version

Internal Reliability Statistics	
McDonald's Ω	N of Items
.613	7

3.3 Sampling

There were 51 samples picked for this study. The criteria of the sample were 18 years old or above, Muslim, having at least one child at home, resides in Bali since at least November 2019. Some criteria that caused respondents to be excluded were male respondents, a female without any child at home, below 18 years old, non-Muslim, residing in Bali after November 2019, civil servants or police or army, and failure to give informed consent.

3.4 Data Collection Process

The participants were recruited by face-to-face communication or by phone or by message on the messenger platform. The questionnaire was only given to people that were willing to join. The questionnaire was by Google Forms and its link was shared on Messenger platform in December 2021. All questions were made mandatory to answer. The participant was required to fill out this questionnaire one time with a maximum duration of 10 minutes. The Google Form contains 1) Consent Form available on the first page of Google Form. 2) Demographic survey on the second page. 3) COVID-19-related stressors questionnaire on the third page. 4) GAD-7 on the fourth page. The response was downloaded into an Excel file. No incentive was given to participants.

3.5 Validity and Reliability

The survey comprised of a web-based and self-report questionnaire. These two factors outlined the threat to the validity and reliability of this study. For non-probability samples, web-based administration questioned actual demographic data and the impossibility of verifying the data collected. Therefore, the questions about gender, age, religion, number of children at home, and date of residence in Bali were asked to all the respondents and they were excluded if they did not fulfill the sample criteria. Besides, the samples were recruited mainly by face-to-face communication, by phone, or by message on Messenger platform. Informal recruitment on social media was not used. Thus, the identity of the sample was mostly known.

Another threat, there was a chance that respondents would give a random answer because of the impossibility of real-time observation. To counter this, it was suggested that the respondent fill out the questionnaire only if really interested to contribute to this study. In addition, this study could be a sensitive topic (e.g., finance) that can affect self-report by external bias because of social desirability or approval. Thus, anonymity and confidentiality were attempted to be guaranteed.

3.6 Method of Data Analysis

The link was shared 60 times. By 20 December 2021, the questionnaire was closed; and 55 filled forms were received. The result from the Google form was downloaded into a Microsoft Excel sheet. There were 4 responses excluded and 51 responses that fulfilled the characteristic of samples picked for statistical analysis. Statistical analysis was performed by using Statistical Package for Social Science (SPSS) as follows:

1. Descriptive statistics for demographic characteristics reported as frequency and percentage. The demographic data were age group, marital status, and education level.
2. The response to COVID-19-related stressors had two answers: yes and no. It was reported as frequency and percentage.
3. The response of anxiety was scored and summed. The final score was categorized into two: anxiety and no anxiety. Respondents with anxiety scores ≤ 6 were categorized as having no anxiety and respondents with scores ≥ 7 were categorized as having anxiety.
4. Chi-Square or Fisher's exact was used because it was categorical data.
5. Chi-Square or Fisher's Exact Test 2x2 was used to find the association ($P < 0.05$) between marital status, education level, and 10 COVID-19-related stressors with anxiety.
6. Chi-Square 5x2 was used to find the association ($P < 0.05$) between age groups with anxiety.

4. RESULTS

4.1 Demographic Characteristic

Since this study was about Muslim mothers, 100% of them were Muslim, female gender with a minimum of one child at home. Most respondents were married (96.1%) and 72.5% had a bachelor's degree or higher (72.5%). Age was categorized into five groups. 18-27, 28-37, 38-47, 48-57 and above 58 years old and the frequency was five respondents (9.8%), 21 respondents (41%), 16 respondents (31.4%), 7 respondents (13.7%), two respondents (3.9%), respectively.

4.2 Covid-19 Related Stressors

31 respondents (60%) of respondents were worried about being infected by COVID-19. 38 respondents (74.5%) answered that they were worried about their children being infected by COVID-19. Comorbidity that causes a higher chance of being infected by COVID-19 appeared in three respondents (5,9%). Respondents that had received a second dose of COVID-19 were 40 respondents (78,4%). Respondents that answered that their household income had been reduced due to the COVID-19 pandemic were 46 respondents (90.2%). Less than that, there were 33 respondents (64%) who were worried about falling into debt due to COVID-19. Finally, there were 5 (9.8%) respondents who reported themselves not having enough food to fulfill the basic needs of their household. There were 20 respondents (39.2%) who felt that they were spending too much time with their children. Children used to use screens for 2 hours or more a day were reported by 45 respondents (88.2%) yet 35 respondents (68%) were reporting that their children were playing outdoors.

4.3 Anxiety

From the scoring system of the GAD 7 Indonesian version and based on the cut-off mentioned above, there were 34 (66.7%) of the respondents do not have anxiety and 17 (33.3%) respondents were having Anxiety.

4.4 Hypothesis Testing

To begin with, the result of anxiety among the respondent, based on demographic features are available in the appendix. The result also shows there is no significant association between all demographic features with anxiety. The hypothesis testing between COVID-19-related stressors and anxiety is also available in the appendix. The only associated and protective factor against anxiety found between “have enough food to meet my household basic need” with anxiety ($P = .037 < .05$ (α); $RR = .35$). This means, COVID-19 related stressor that effecting mothers’ anxiety is having enough food to meet household basic needs during the COVID-19 outbreak.

5. DISCUSSION

This part discusses how the results from the previous chapter answer the research question of this study and how these are relevant to previous studies conducted. A slight reminder that the research question was to what extent COVID-19-related stressors affect the anxiety of Muslim mothers in Bali? The first part is a discussion about the proportion of each variable and the second part is a discussion about the association between anxiety and COVID-19 stressors. The first part of the

COVID-19-related stressors is about contracting the COVID-19 virus. This study showed that 74.5% of mothers were concerned about their children being infected by COVID-19. This data was lower than the data on maternal concerns in Saudi Arabia (Meraya et al., 2021) however, this data was higher than the level of concern for mothers in Japan (Kimura et al., 2021).

In general, the data obtained showed that the proportion of mothers who were worried that their children would contract COVID-19 was higher than mothers who were worried that they would contract it themselves (60%). This proportion was similar to the research in Iran (Shahriarirad et al., 2020). It seems that many mothers were worried that their children would fall ill. However, mothers needed to be reminded that sick mothers would face difficulties in parenting. Therefore, the health of mothers and children must receive equal attention.

Also, from the results of the study, it was found that out of a total of 51 respondents, there were only three people who had comorbidities and one of them had not received a second injection of COVID-19. Having comorbidity can be one of the reasons why the vaccine cannot be given. The study also showed that 78,4% of mothers had received a second vaccine shot. Meanwhile, 66.2% of mothers who have received vaccines, at least once, in Poland (Lis-Kuberka et al., 2022). Mothers and especially pregnant women, must be persuaded to accept the vaccination without coercion. They are recommended to carry out a complete vaccination. The reason is pregnant women during the current pandemic without getting a vaccine can possibly cause complications and even death (Satin & Sheffield, 2022).

The second part of the COVID-19-related stressors was about finances. This stressor was one of the biggest contributors to results compared to other stressors. The results showed that most mothers or 90.2% of the study reported a decrease in family income after almost 2 years of the COVID-19 outbreak. This data has been supported by previous research that the economy in Bali needs more time to recover from the pandemic (Laksito & Yudiarta, 2021). Next, most mothers were worried about going into debt (64%). This data was higher when compared to Canada. The results of the data showed that the level of parental concern about finances in Canada is much higher (45.6%) (Gadermann et al., 2021).

As the conditions described previously, the stressor that was considered as the most influencing is financing. This condition was not much different from the conditions before the pandemic in Egypt. As many as 70% of mothers in Egypt experienced food difficulties. (Mahfouz et al., 2021) However, the situation was different in the United States, which was about 51.6% of the population in the United States, were low-income during the pandemic (Fang et al., 2021). Data from both countries (Egypt and America) was much higher than in Indonesia, especially in the Bali Region.

The results showed that only around 9.8% of Muslim mothers in Bali report that they did not have enough food to meet their basic household needs. This situation might be caused by the imposition of restrictions on Community Activities (PPKM) by Indonesian government policies (Ikhsan & Virananda, 2021), As many as 5 out of 51 Muslim families in Bali are still having trouble getting food during the pandemic and the PPKM program is taking place. However, the data is still relatively low or small when compared to Egypt and the United States.

The third part of the stressors related to COVID-19 was about children's activities. Around 60.8% of mothers did not feel like spending too much time with their children during the pandemic. One reason was that children spent too much time on their smartphones or laptop screens to study from home. This was in accordance with the data obtained that as many as 88.2% of mothers reported that their children spent two hours or more in front of the screen and had less time with the mother. Moreover, this result was higher than the study conducted in Canada (75.9%) (McCormack et al., 2020).

Related to a description of mothers' anxiety, the data showed that 33.3% of respondents had anxiety symptoms. This percentage was higher than the national percentage of Anxiety (Anindyajati et al., 2021). This result was higher than the previous study (4%) which was conducted in one of the districts in Bali where it involved 100 samples of pregnant mothers and applied Depression Anxiety Stress Scale 42 (DASS 42) to measure anxiety (Nurtini et al., 2021). There was no further explanation of religion in their study sample, so it is difficult to find reasons for the differences. However, estradiol levels might explain this difference. Non-pregnant women were identified as having lower estradiol levels compared to pregnant women (Deng et al., 2022).

This section of the discussion of results is about the association between COVID-19-related stressors with Anxiety. The data explained that there was no significant association between the mother's worry about getting infected with the COVID-19 virus and the mothers' worry about their children getting infected by COVID-19 with anxiety. This study was in line with a study in Japan. (Kimura et al., 2021). Moreover, there was not enough data to prove an association between mothers' comorbidities with anxiety which was not fit with the previous research (Sayeed et al., 2020). Being infected by COVID-19 might not be the reason for anxiety as the recovery rate from COVID-19 in Indonesia was more than 90% (Satuan Tugas Penangan COVID-19, 2021). Besides, the knowledge that being vaccinated can reduce the severity of the COVID-19 infection might explain this finding.

The data showed that there was no association between maternal COVID-19 vaccination with anxiety. This was in contrast with the previous study (Chen et al., 2022; Putri et al., 2021). There were some possibilities to explain this finding. The availability of vaccines might be a breeze during the pandemic and if there is any negative effect, it should have been proven to exist or not exist by

that time. Another reason, receiving a second shot has become a mandatory requirement for domestic travel (Wikanto, 2021). Besides, the MUI released a fatwa that it is mandatory to vaccinate as a form of ikhtiyar (Satuan Tugas Penanganan COVID-19, 2021). The government also plans to reopen tourism if the number of residents vaccinated has reached the predetermined target (Laraspati, 2021). As mentioned before, tourism is the main financial source and reason for most Muslims to migrate to Bali.

Data also showed that there is no significant relationship between household income and anxiety. This contradicts the results of three previous studies where financial problems were associated with anxiety (Kimura et al., 2021; Gadermann et al., 2021; Islam et al., 2021). Interestingly, from the total sample, 58.8% of mothers with reduced household income did not experience symptoms of anxiety. Family income may be reduced but may not be zero income. Savings and support from families outside Bali may help financially. As Indonesians are well known for their large families, even though their children were married and considered capable of being financially independent, Indonesian parents still cover their children's financial shortfalls by providing financial assistance (Evelyn et al., 2021).

The data also confirmed that there was no association between maternal worry about falling into debt with anxiety which challenged previous findings (Godinic et al., 2019). One of the reasons might be related to the fintech peer-to-peer lending phenomena. Dewi (2021) wrote about Indonesian attitudes regarding this. She explained that fintech lending is extremely easy, fast, popular, and aggressive in offering their product. She added that most Indonesians were lacking in literacy which caused them to not make the right financial choices. Thus, unrealistic worries about future debt might caused the result of the present study. The other possibility was that mothers believe that their financial condition will recover soon, and they will be able to pay off the debt sooner or later.

The previous discussion about finance was about food security, where there was an association between maternal food security and anxiety (RR .35; $P = .037$), which was validated with the previous research (Fang et al., 2021; Mahfouz et al., 2021). It is also a sign that there is also a lack of financial support and purchasing power to buy food is minimum. As a result, financial concern did not affect anxiety until it reached the level of food insecurity. According to Maslow's theory, food is a physiological need that is the most basic in the hierarchy of needs which could push higher needs to the background, and an extended lack of food can cause death (Taormina & Gao, 2013). In addition, the mother receiving food assistance can face stigma which can further cause anxiety (Fang et al., 2021).

One recent research in Singapore found that there was an association between the maternal time at home with children and mental health (Yang et al., 2020). Besides, a study in Saudi Arabia also

showed that having children in the house increased psychological distress (Meraya et al., 2021). This condition occurred as during the pandemic children were attending online school from home which required mothers to accompany them. Meanwhile, the present data showed that there were no associations between greater time spent together with the child and anxiety. The present study also showed that the proportion of maternal anxiety is higher in mothers who did not feel they were spending too much time with their children (19.6%) in comparison with mothers who felt they were spending excessive time with their children (13.7%).

Regarding the previously mentioned results that the increased time spent with children at home during the pandemic increases psychological stress, the reality is very different from the data found in Indonesia. The results obtained are contrary to the previous results. The facts obtained are that mothers in Indonesia are reported to have spent quality time together and are challenged to do new activities at home during the pandemic (Sari et al., 2021). Besides, one of the maternal roles according to Islam is to take care of their children despite difficult times which assumes that mothers have the instincts of selfless nurturers (Badissy, 2016).

The last finding is that there was no association found between children's screen time and outdoor activity with maternal anxiety. This was opposite to the previous study (McCormack et al., 2020). However, there was no association between children's screen time with maternal anxiety which is in line with a study in another province in Indonesia (Tangkuman et al., 2021). Financial turbulence might be a big distraction for the mother not to mind the higher level of needs, such as the relationship between children's well-being with screen time for more than two hours. Mothers might also normalize this activity as by 2020, on average, Indonesian spend 8 hours and 52 minutes on the internet daily (Nurhayati-Wolff, 2021).

From the Islamic perspective, it is permissible to be concerned about one's personal safety and that of one's children (Shabana, 2021). Further, literacy and debt awareness can be promoted through preaching. Challenging financial situations should not be the reason for a Muslim to be anxious. Fortunately, 66.7% of mothers were a step away from the anxiety that is considered a disorder of an unhealthy soul (Abdullah et al., 2012). Faith can help tackle difficult situations (Shabana, 2021). The conclusion to be noted is that the impact of faith among Muslim mothers in Bali must be considered during this challenging pandemic.

6. CONCLUSION

Muslim mothers in Bali have faced various challenges due to COVID-19. One-third of Muslim mothers in Bali experienced anxiety during this pandemic and 9.8% of Muslim families did not have enough food. There was an indication that food insecurity during the COVID-19 pandemic is affecting Muslim mothers' anxiety. In addition, this study may be an initial stage that can develop

many aspects. For example, the dynamic about mother-child bonds or extended family or kinship with maternal anxiety. Muslim mothers without anxiety symptoms also need to be investigated as to how their religious beliefs helped them to be resilient during the pandemic. Although out of topic, the parenting style of a mother with anxiety needs to be evaluated. The psychological evaluation should be done on children when the mother has symptoms of anxiety.

6.1 Implications

The high proportions of maternal anxiety in a vulnerable minority are a crucial issue. It is difficult to prevent anxiety when there is not enough food at home. Thus, it is expected that financial sufficiency to the level of food security protects mothers from anxiety. Besides, bigger issues may come due to food insecurity. If any, a bigger effort is needed to run and supervise food aid, especially during the final distribution. New job vacancies are expected to open soon, or new skills can be taught to gain income from a domestic or online market. Knowledge about debt or loans should be made available, either by the formal sector or through Islamic preachers.

Mother and child activities can be developed with new ideas not only during the pandemic but even afterwards because more physical activity with family can help to reduce children's screen time. Online content that is accessed by children should be always under parental control since financial turbulence might distract the mother from this matter. Finally, the intervention that is in line with Islamic values and considers the child's developmental stage is important to build resilience and reduce anxiety.

6.2 Limitation of Research

A cross-sectional study made it difficult to explain the causal relationship between mothers and stressors, and this study was looking for an association. This study also did not control the confounding variable. Bias is hard to avoid due to the limitation of web-based questionnaire for those who have access to the internet and the ability to read and write. This study did not reach illiterate and lower-class income. Besides in financial aspect, the sample also needed to be mentally sound to access this questionnaire which bias toward a "healthier" sample. Furthermore, the sample of this study was convenience sampling with a small number of samples that could not represent Muslim mothers in general.

APPENDIX

Anxiety based on demographic features

Category	Anxiety				P
	Anxiety		No Anxiety		
	n	%	n	%	
Lower education	3	5.9	11	21.6	.334
Higher education	14	27.5	23	45.1	
Single	2	3.9	0	0	.107
Married	15	29.4	34	66.7	
18-27 years old	1	2	4	7.8	.505
28-37 years old	12	23.5	9	17.6	
38-47 years old	3	5.9	13	25.5	
48-57 years old	3	5.9	4	7.8	
58 years and above	1	2	1	2	

Anxiety based on COVID-19 Related stressor

COVID-19 Related stressor	Anxiety				P
	Anxiety		No Anxiety		
	n	%	n	%	
Worried about getting infected by COVID-19	12	38.9	19	37.3	.478
Not worried about getting infected by COVID-19	5	9.8	15	29.4	
Total	17	33.3	34	66.7	

Worried about children getting infected by COVID-19	13	25.5	25	49	1
Not worried about children getting infected by COVID-19	4	7.8	9	17.6	
Total	17	33.3	34	66.7	
Have comorbidity	2	3.9	1	2	.255
Does not have comorbidity	15	29.4	33	64.7	
Total	17	33.3	34	66.7	
Have received a second shot of the COVID-19 vaccine	14	27.5	26	51.0	.731
Have not received a second shot of the COVID-19 vaccine	3	5.9	8	15.7	
Total	17	33.3	34	66.7	
Household income has been reduced due to COVID-19	16	31.4	30	58.8	.654
Household income has not been reduced due to COVID-19	1	2.0	4	7.8	
Total	17	33.3	34	66.7	
Worry falling into debt due to COVID-19	11	21.6	22	43.1	1
Do not worry falling into debt due to COVID-19	6	11.8	12	23.5	
Total	17	33.3	34	66.7	
Have enough food to meet my household basic need	13	25.5	33	64.7	.037
Do not have enough food to meet my household basic need	4	7.8	1	2.0	
Total	17	33.3	34	66.7	

Have too much time at home together with children during COVID-19 outbreak	7	13.7	13	25.5	1
Do not have too much time at home together with children during COVID-19 outbreak	10	19.6	21	41.2	
Total	17	33.3	34	66.7	
Children engage with screen \geq 2 hours a day	16	35.6	29	56.9	.650
Children do not engage with screen \geq 2 hours a day	1	2.0	5	9.8	
Total	17	33.3	34	66.7	
Children do physical activity outside the house	12	23.5	23	45.1	1
Children do not do physical activity outside the house	5	9.8	11	21.6	
Total	17	33.3	34	66.7	

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