Original Article

Determination of Anxiety and Perceived Social Support among Mothers with Infants from 0-1 Years During the COVID-19 Pandemic

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Abstract

Background: Many children were registered to be infected as a result of close contact with COVID-19 cases or due to travel through epidemic regions. On one hand, the responsibility of motherhood and the woman's mental adjustment to this role, and on the other, the inadequate data about effects of COVID-19 on the baby may cause anxiety disorders in mothers. At the same time, social support provided during one of the vital crisis periods of parenting may assist in reducing stress on the individual.

Objektive: The aim of this descriptive study was to determine the anxiety and perceived social support levels felt by mothers with infants 0-1 years old during the COVID-19 pandemic.

Methods: The sample of the study was comprised 146 mothers with infants from 0-1 years of age reached online. Study data were collected with a questionnaire Generalized Anxiety Disorder Test (GAD-7) and Multidimensional Scale of Perceived Social Support (MSPSS).

Results: Forty one percent of mother had someone to support baby care, 81.5% followed news related to COVID-19, 80.8% had sufficient knowledge levels about COVID-19 and 85.6% experienced worry about their baby's health during the COVID-19 pandemic. GAD-7 test points of 96.9% of mothers had higher than limit for generalized anxiety disorder. Mothers' MSPSS score were above the mean. Mothers with low income, insufficient knowledge about the COVID-19 pandemic and experienced worry about the baby's health had higher mean GAD-7 test points and the difference between the groups was statistically significant (p<0.05). Additionally, mean GAD-7 points were significantly correlated at low levels with the MSPSS total (p<0.05).

Conclusion: The results of the study determined that as perceived social support reduced, anxiety levels increased among mothers during the COVID-19 pandemic.

Key words: COVID-19, infant, mothers, anxiety, social support

Introduction

Coronaviruses (CoV) emerging in the last 10 years formed a global public health threat by causing severe acute respiratory syndrome in Guangong in China in 2009 (SARS-CoV) and Middle East respiratory syndrome in the Middle East in 2012

(MERS-CoV) epidemics. On 10 January 2020, the novel coronavirus causing a pneumonia epidemic in Wuhan city in China was named as COVID-19 by the World Health Organization (WHO) (WHO, 2020). The COVID-19 epidemic causing a global emergency situation in Europe and America in 2020 leads to acute respiratory function disorder

and severe endemic and epidemic pneumonia, resulting in acute respiratory distress syndrome (ARDS) with high mortality in complicated patients (Wu & McGoogan, 2020). From current articles, COVID-19 can infect individuals in all age groups, and when the virus transmission and spread rates and mortality rates are examined, it appears infants and children under 20 years of age are affected by symptoms with relatively less severity compared to adults (Ovali, 2020; Wu & McGoogan, 2020).COVID-19 is a beta group virus with 89% similar nucleotides to SARS. As these are viruses which can rapidly mutate, there is the possibility of infection with a new virus again (Chan, Yuan, & Kok, 2020). Patients positive for SARS-CoV-2 have fever and cough as the most commonly observed initial symptoms. In cases with severe pneumonia, dyspnea and fatigue are observed (Rodriguez-Morales et al., 2020). Studies of confirmed COVID-19 cases reported the initial symptoms were fever (88.7%), cough (57.6%) and shortness of breath (45.6%). Sore throat, blocked nose, muscle pain, headache, vomiting and nausea are observed among initial symptoms (Rodriguez-Morales et al., 2020). However, some people infected with SARS-CoV-2 may recover from the disease while completely asymptomatic (Mizumoto, Kagaya, Zarebski, & Chowell, 2020). Sometimes children with COVID-19 infection are asymptomatic or have some upper respiratory tract symptoms including blocked and runny nose, while fever, dry cough, fatigue, nausea, vomiting, abdominal pain and diarrhea may be observed. Most infected children have mild clinical symptoms and good prognosis. Most pediatric patients begin to heal within 1-2 weeks and progression to lower respiratory tract infection is rare (Li et al., 2020). Though COVID-19 cases are rarely infants and neonates, there are infants who were reported to be admitted to hospital with COVID-19 diagnosis December 8, 2019 to February 6, 2020 in China. The minimum age of infants was 1 month with maximum of 11 months (Wei et al., 2020). Additionally, the severe and critical case rate is 10.6% below the age of 1 years, 7.3% from 1-5 years, 4.2% from 6-10 years, 4.1% from 11-15 years and 3% above 15 years. It was reported that infants may be at risk of more severe respiratory failure than initially considered (Dong et al., 2019). Most pediatric cases are family cluster cases and most have epidemiological connections to adult patients. Pediatric clinical symptoms are

not typical and are relatively milder compared to adult patients. Many children were registered to be infected as a result of close contact with COVID-19 cases or due to travel through epidemic regions (Hong, Wang, Chung, & Chen, 2020). As can be seen, the COVID-19 epidemic forms a threat for all individuals including neonates. The transition to motherhood involves important psychological and social changes making it one of the most important stages in a woman's life (Batman & Seker, 2019). In this postpartum period, one of the factors affecting adjustment and coping is the social support perceived by the mother in this period (Mermer, Bilge, Yucel, & Ceber, 2010). Lack of social support negatively affects the adjustment process of women to the role of motherhood in the postpartum period, may reduce sensitivity to the infant and negatively affect relationships with those around them (Taskin, 2020). Women in this postpartum period transitioning to motherhood make efforts to adapt to change and meet their own needs and the needs of the infant. If sufficient support is not provided to the mother in this period shown to involve increased stress, this situation may negatively affect the physical and mental health of the mother (Mermer et al., 2010). A study reported that an important cause of mental problems observed in the postpartum period is inadequacy of social support (Yildirim, Hacıhasanoğlu, & Karakurt, 2011).On one hand, the responsibility of motherhood and the woman's mental adjustment to this role, and on the other, the inadequate data about effects of COVID-19 on the baby may cause anxiety disorders in mothers. At the same time, social support provided during one of the vital crisis periods of parenting may assist in reducing stress on the individual (Simsek, Demirci, & Bolsoy, 2019). This research was performed with the aim of determining the anxiety and perceived social support levels experienced by mothers during the COVID-19 pandemic

Methods

Design and Participants: This population for this study, planned as a descriptive type, comprised mothers who could be accessed online through social media. The sample in the population comprised 146 mothers who could be accessed through social media, abided by the inclusion criteria for the research, were 18 years and older, with infants from 0-1 year and who accepted participation in the research.

Ethical considerations: Institutional permission was granted by the Ministry of Health General Directorate of Health Services on May 5, 2020 with ethics committee permission granted by University Clinical Research Ethics Committee (May 28, 2020/116). People included in the study were informed in writing and they provided consent. Data were collected online from May 28, 2020 to June 10, 2020.

Data Collection: Collection of data used a questionnaire prepared by the researchers using the literature, the Generalized Anxiety Disorder (GAD-7) test and the Multidimensional Scale of Perceived Social Support. The questionnaires were converted to a Google form and completed by the women themselves in the online environment.

Data Collection Tools

Questionnaire: The questionnaire included 11 questions about the sociodemographic characteristics of mothers, age of infants, presence of chronic disease and health problems related to the birth. The survey related to quarantine included 7 questions about frequency of monitoring news during quarantine, knowledge about COVID-19, presence of help with infant care during this period and anxiety experienced related to the infant's health.

Generalized Anxiety Disorder (GAD-7) Test: This scale was developed by Spitzer, Kroenke, Williams, and Löve (2006) to assess generalized anxiety disorder within the last two weeks and comprises 7 questions with 4-point Likert responses developed according to DMS-IV-TR criteria. Turkish validity and reliability were completed by Konkan, Şenormancı, Güçlü, Aydın, and Sungur (2013) for the Turkish adaptation, the cut-off point is reported to be 8 points. The original form of the GAD-7 had Cronbach alpha coefficient of .85, while in this study it was .89.

Multidimensional Scale of Perceived Social Support: This scale developed by Zimet, Dahlem, Zimet, and Farley (1988) had Turkish adaptation, validity and reliability completed by Eker, Arkar and Yaldiz (2001). The scale contains 12 questions, with Likert-type responses and comprises three subscales of friends (items 6, 7, 9 and 12), family (items 3, 4, 8, 11) and special person (items 1, 2, 5, 10). The addition of subscale points gives the total points for the scale. Point range from 1 to 7, with subscale points from 4 to 28 and total points from 12 to 84. High points

indicate high perceived social support. The original form of the scale had Cronbach alpha coefficients of .89 for the whole scale, .88 for the friend support subscale, .85 for the family support subscale and .92 for the special person support subscale (Eker et al., 2001). In this study, the Cronbach alpha coefficients were .88 for the whole scale, .90 for the friend support, .87 for family support and .85 for special person support subscale.

Data analysis: Analysis of data used a statistical package program on the computer. Analysis of data used the Kolmogorov-Smirnov test to determine whether points obtained from the scales had normal distribution or not. It was determined that scale points did not abide by the normality assumption. Analysis of data used the descriptive statistical methods of number, percentage, standard arithmetic mean and deviation. Differences between independent groups were examined with the Mann Whitney U and Kruskal Wallis tests. Relationships between scales were assessed with correlation analysis. For statistical significance, p<0.05 was taken as limit value.

Results

The mean age of mothers with infants from 0-1 year included within the scope of the study was 30.72±4.70 years. Most mothers (70.5%) were in the 26-35-year age group. Of mothers, 64.4% had educational level of undergraduate or above, while 68.5% of their partners had educational level of undergraduate or above. Among the mothers, 54.1% were employed, 91.1% had partners who were employed, 54.1% had income level 'equal to outgoings' and 5.5% had psychiatric history.

It was identified that 45.9% of mothers had received education about baby care before or after the birth. Of infants, 85.6% were born at term, 11.6% had health problems at birth and 2.7% had chronic disease.

Among the mothers, 9.6% had relatives with COVID-19, 67.8% has someone who continued to work in the home during the quarantine, 41.1% had someone to support baby care during the quarantine, 81.5% frequently monitored news related to COVID-19 and 85.6% experienced worry about the infant's health (Table 1).

Mothers had mean GAD-7 test points of 14.84 ± 4.93 , with highest item points for 'rapidly become irritated, annoyed or restless' at

2.52±0.88, 'excessive worry about different topics' at 2.27±0.87, and 'fear that something very bad will happen' at 2.19±1.03, and 'inability to relax and be comfortable' at 2.15±0.86. According to mean GAD-7 test points, 96.9% of mothers had points identified to be above the limit for generalized anxiety disorder. The mean GAD-7 points for mothers with generalized anxiety disorder were 15.12±4.97 (Table 2).

Mothers had points on the MSPSS of 23.36±5.49 for the 'family' subscale, 20.52±6.66 for the 'friends' subscale, 17.76±7.62 for the 'special person' subscale and 61.66±15.63 for the whole scale. Considering points from 12-84 can be obtained from the scale, it appears the points obtained were above the mean (Table 3).

Within the scope of the study, there were no statistically significant differences in the GAD-7 mean test points according to the mothers' age group, educational level of themselves or their partner, employment status of themselves or their partner, and psychiatric disease history (p>0.05). The only significant difference was found for perceived income level (p<0.05). Advanced statistical investigation identified that the difference was due to those with income equal to outgoings and those with income higher than outgoings (p=0.023) (Table 4).

As the mothers' age increased, the mean points on the MSPSS increased and the difference between groups was found to be significant (p<0.05). Advanced statistical assessment determined the difference was between mothers aged '18-25-years' and '26-35-years'. As the educational level of mothers increased, the mean points obtained from the MSPSS increased and this was statistically significant (p<0.05). The differences in MSPSS mean points according to mothers' employment status, partner educational level, partner employment status, income perception and presence of psychiatric history were statistically insignificant (p>0.05) (Table 4).

When mean GAD-7 and MSPSS points of mothers were compared according to some characteristics

of infants, there were no statistically significant difference in mean GAD-7 test points and MSPSS points according to training about baby care, birth age of infant, health problems experienced during the birth and chronic disease in the infant (p>0.05). Additionally, the mean points for GAD-7 of mothers who had infants with chronic disease and experienced problems with the birth were found to be higher compared to mothers with infants who did not have chronic disease or experience health problems with the baby's birth. Mean MSPSS points were lower for these mothers; however, the differences were not identified to be statistically significant (p>0.05).

Mothers with adequate knowledge about COVID-19 and mothers who worried about their infant's health had higher mean GAD-7 test points and the differences between the groups were statistically significant (p<0.05). The differences in GAD-7 test points according to incidence of COVID-19 among relatives, anyone continuing to work at home during the quarantine, someone to support baby care during the quarantine and following news related to COVID-19 were found to be statistically insignificant (p>0.05) (Table 5).

According to the research findings, there was a negative weak level of correlation between mean GAD-7 test points with mean MSPSS points (r=-.235), 'family support' subscale points on the MSPSS (r=-.277), and 'friend support' subscale points (r=-.227) and these correlations were statistically significant (p<0.01). However, there was no statistically significant correlation with the 'special person support' subscale points (r=-.227) (p>0.05). Correlation analysis results observed that as mean points for the MSPSS total, friend, family and special person scales reduced, the GAD-7 mean points increased. Additionally, as mean points obtained from the MSPSS subscales increased, the mean total points increased. Accordingly, as the social support levels perceived by women reduced, it was identified that anxiety levels increased (Table 6).

Table 1. Distribution of mothers by some situations experienced regarding the COVID- 19 quarantine process

| Variables | n | % |
|---|-----|------|
| COVID 19 status near them | | |
| Yes | 14 | 9.6 |
| No | 132 | 90.4 |
| The presence of someone who continues to work at home | | |
| during the quarantine period | | |
| Yes | 99 | 67.8 |
| No | 47 | 32.2 |
| The presence of someone who supports the baby's care at | | |
| home during the quarantine process | | |
| Yes | 60 | 41.1 |
| No | 86 | 58.9 |
| Following the news about the COVID-19 outbreak during the | | |
| quarantine process | | |
| Often | 119 | 81.5 |
| Rarely | 27 | 18.5 |
| None | | |
| Adequate assessment of the level of knowledge on COVID-19 | | |
| Yes | 118 | 80.8 |
| No | 28 | 19.2 |
| Anxiety about the health of the baby during the COVID-19 | | |
| pandemic | | |
| Yes | 125 | 85.6 |
| No | 21 | 14.4 |

Table 2. Distribution of Mothers Experiencing Anxiety Disorder According to GAD-7

| Presence of generalized anxiety | n | % | $\bar{\mathbf{x}} \pm \mathbf{S}\mathbf{D}$ |
|-----------------------------------|-----|-------|---|
| according to GAD-7 | | | |
| No anxiety (7 points or less) | 5 | 3.4 | 7.00±0.00 |
| Have anxiety (8 points and above) | 141 | 96.6 | 15.12±4.97 |
| Total | 146 | 100.0 | 14.84±4.93 |

Table 3. MSPSS and its sub-dimensions scores

| MSPSS and its sub- | Lower-upper value to | Signed lower- | x ±SD |
|-------------------------|----------------------|---------------|------------|
| dimensions | be marked | upper value | |
| Family support subscale | 4-28 | 4-28 | 23.36±5.49 |

| Friend support subscale | 4-28 | 4-28 | 20.52±6.66 |
|----------------------------------|-------|-------|-------------|
| A special human support subscale | 4-28 | 4-28 | 17.76±7.62 |
| MSPSS Total | 12-84 | 12-84 | 61.65±15.63 |

Table 4. Comparison of the mean scores of the GAD-7 Test and MSPSS according to the sociodemographic characteristics of the mothers

| Socio-demographic | | GAD-7 test | MSPSS | |
|---|-----|---|------------------------------------|--|
| characteristics | n | $\bar{\mathbf{x}} \pm \mathbf{S}\mathbf{D}$ | $\bar{\mathbf{x}} \pm \mathbf{SD}$ | |
| Age | | | | |
| 18-25 | 20 | 16.00±6.80 | 54.85±12.96 | |
| 26-35 | 103 | 14.47 ± 4.48 | 62.47 ± 16.10 | |
| 35 and above | 23 | 15.47 ± 4.99 | 63.91±14.55 | |
| Test and p value | | KW= 0.928 p=0.629 | KW=7.134, p=0.028* | |
| Education level | | | | |
| Primary school | 1 | 16.00±0.00 | 60.00±0.00 | |
| Middle School | 3 | 9.33 ± 0.57 | 54.33±8.02 | |
| High school | 26 | 16.65 ± 0.57 | 55.30±8.02 | |
| Associate Degree | 22 | 14.54 ± 3.88 | 62.13±13.27 | |
| Undergraduate and above | 94 | 14.57 ± 4.82 | 63.55±16.78 | |
| Test and p value | | KW= 8.308, p=0.81 | KW=10.386, p=0.034* | |
| Working status | | | | |
| Working | 79 | 15.43±5.59 | 62.18±16.39 | |
| Non-working | 67 | 14.14 ± 3.95 | 61.02±14.78 | |
| Test and p value | | MWU=2399.000, | MWII-2479 500 p=0 500 | |
| Test and p value | | p=0.330 | MWU=2478.500, p=0.509 | |
| Partner educational level | | | | |
| Primary school | 7 | 20.28±7.54 | 62.14±5.78 | |
| Middle School | 6 | 17.66±6.31 | 64.33±16.36 | |
| High school | 33 | 14.12±4.55 | 57.12±15.25 | |
| Undergraduate and above | 100 | 13.62 ± 4.54 | 62.96±16.06 | |
| Test and p value | | KW=5.900, p=0.117 | KW=5.043, p=0.169 | |
| Partner employment status | | | | |
| Working | 133 | 14.83±5.07 | 62.27±14.98 | |
| Non-working | 13 | 14.92 ± 3.42 | 55.38±20.86 | |
| Test and p value | | MW= 805.000, p=0.682 | MWU=707.000, p=0.279 | |
| Perception of income | | | | |
| Less than income ^a | 35 | 14.71±4.99 | 56.85±17.88 | |
| Equal to income and expenses ^c | 79 | 15.70±5.14 | 63.40±14.91 | |
| More than income b | 32 | 12.84±3.73 | 62.59±14.07 | |
| Test and p value | | KW=7.193, p =0.027* | MWU=3.306, p=0.191 | |

| Psychiatric illness history | | | _ |
|-----------------------------|-----|---------------------|----------------------|
| There is | 8 | 14.00±4.62 | 55.75±15.65 |
| There is not | 138 | 14.89 ± 4.96 | 62.00±15.61 |
| Test and p value | | MW=510.500, p=0.721 | MWU=409.500, p=0.220 |

^{*}p<0.05

Table 5. Comparison of the mean scores of the GAD-7 test according to the situations experienced during the quarantine process of the mothers

| Situations experienced during the quarantine | n | GAD-7 test |
|---|-----|---|
| process | | $\bar{\mathbf{x}} \pm \mathbf{S}\mathbf{D}$ |
| COVID-19 status near them | | |
| Yes | 14 | 16.14 ± 3.89 |
| No | 132 | 14.70 ± 5.02 |
| Test and p value | | MWU=705.500, p=0.145 |
| Anyone who continues to work at home during | | |
| the quarantine process | | |
| Yes | 99 | 14.83±5.13 |
| No | 47 | 14.85 ± 4.54 |
| Test and p value | | MWU=2227.500, p=0.678 |
| The presence of someone who supports the | | |
| baby's care at home during the quarantine | | |
| process | | |
| Yes | 60 | 14.46 ± 4.53 |
| No | 86 | 15.10 ± 5.20 |
| Test and p value | | MWU=2448.500, p =0.600 |
| Following the news about the COVID-19 outbreak | | |
| Often | 119 | 14.99±5.10 |
| Rarely | 27 | 14.18 ± 4.14 |
| Test and p value | | MWU=0.344, p=0.568 |
| Sufficient knowledge of the COVID-19 outbreak | | |
| Yes | 118 | 16.25±4.51 |
| No | 28 | 14.50 ± 4.99 |
| Test and p value | | MWU=4.073, p =0.044 * |
| Anxiety about the health of the baby during the COVID-19 pandemic | | |
| Yes | 125 | 15.24±4.98 |
| No | 21 | 12.42 ± 3.91 |
| | | MWU=5.486, p=0.019* |

^{*}*p*<0.05

Table 6. Correlations between MSPSS and its sub-dimensions and GAD-7 scores

r: correlation coefficient *p<0.05 **p<0.01

| Scales and sub- dimensions | Family support sub- dimension | Friend support sub- dimension | A special person support subdimension | Total MSPSS | GAD-7 |
|---|--|--|---------------------------------------|----------------|-------|
| | r | r | r | r | r |
| Family support sub- dimension | 1 | | | | |
| Friend support sub- dimension | .535** | 1 | | | |
| A special person support sub- dimension | .335** | .435** | 1 | | |
| Total MSPSS | .743** | .827** | .791** | 1 | |
| GAD-7 | 277** | 227* | 084 | 235** | 1 |

Discussion

Though the number of children diagnosed with COVID-19 is relatively low, the COVID-19 pandemic forms a threat for all individuals including infant and neonates (Molloy et al., 2020). The first year after birth is a sensitive period due to a new member joining the family, adjustment of mother and family to this process and caring for the infant. In this sensitive period, experience of negative events like the COVID-19 pandemic may cause worry and anxiety disorders in the mother and lead to the need for more social support.

This study was performed with the aim of determining the anxiety and perceived social support of mothers with infants from 0-1 years during the COVID-19 pandemic. The majority of mothers in this study (81.5%) frequently followed news related to COVID-19, while 85.6% experienced worry related to their baby's health (see Table 1). During the COVID-19 pandemic, mothers received highest points (2.52±0.88) for the 'quick to become irritated, annoyed or restless' item on the GAD-7 test (see Table 2). In our study

findings, mean points for the GAD-7 were 15.12±4.97, with 96.9% of mothers receiving points above the limit for generalized anxiety disorder according to GAD-7 points (see Table 3). Similar to findings in this study, a systemic review sharing experiences of families during the COVID-19 pandemic reported that families had high traumatic SARS-CoV-2 distress about infection (Brooks et al., 2020). Another study identified that families experienced severe worry and anxiety about their children becoming infected in situations where they were infected (Darlington et al., 2020). Of 9 infants reported to be infected in China, all had at least one infected family member and generally the infant's infection occurred after infection of the family member (Wei et al., 2020). In line with this data, during the COVID-19 pandemic when people remained at home, mothers are considered to experience high worry and generalized anxiety due to the thought that they cannot protect their infants against COVID-19 and the lack of possible treatment methods for this disease.

In this study, the mean GAD-7 test points were found to be statistically significant

according to the perceived income level during the COVID-19 pandemic for mothers in the first year of motherhood (p<0.05) (see Table 5). Previous studies have emphasized that women with high income levels experience less difficulty in adjusting to the postpartum period and expressing themselves and cope better with postpartum stressors (Yildiz & Akbayrak, 2014; Ust & Pasinlioglu, 2015).

The postpartum period is a period when mothers experience unavoidable mood and biological changes. It is stated that social support perceived by mothers is very important in this period (Turkoglu, Celik, & Pasinlioglu, 2014). In this study, mothers had mean MSPSS points of 61.66±15.63., It appears the points were above the median value considering points from 12 to 84 can be obtained from the scale. When the literature is investigated, similar results to our study are reported (Boratav, Tokay & Kuey, 2016; Aktas & Karacam, 2017). Mothers at home with their infants during the COVID-19 pandemic are thought to primarily require supportive relationships with their partners, and also need positive support from their families from the postpartum period.

In this study, as the age of mothers increased, the mean MSPSS points were found to increase (see Table 5). Another study found no statistical difference between perceived social support and age groups (Sahin & Altinel, 2010). In this study, as the mothers' age increased, it is thought that perceived social support increased as a result of the increase in people included among family and friends.

As the educational level of mothers increased in this study, mean MSPSS points were revealed to increase (see Table 5). Similar to this result, the increase in mothers' educational level led to better self-expression which is associated with better ability to use social support systems in the literature (Metin & Pasinlioglu, 2016). Situations like premature birth and neonates not being born

healthy may induce worry, anxiety, feelings of guilt and panic among family members (Celen & Tas Arslan, 2017). In this study, mothers with infants who had chronic disease or with health problems at birth had higher GAD-7 test points compared to mothers of infants without chronic disease or health problems at birth; however, the difference was not statistically significant (p>0.05). A study performed with the aim of determining the anxiety and depression levels among parents with infants in the neonatal intensive care unit due to a variety of chronic diseases and problems experienced at birth reported that families had moderate levels of anxiety, while most had depressive symptoms. Other studies reached similar results to the findings of this study (Ghorbani, Dolatian, Shams, & Alavi-Majd,, 2014; Mizrak, Deniz, & Acikgoz, 2015; Celen & Tas Arslan, 2017). Due to the uncertainty and unsafe environment during the COVID-19 pandemic, the reasons for worry and anxiety developing in mothers may be interpreted as the greater responsibility of mothers for baby care and mothers who required social support being unable to receive sufficient support during the COVID-19 pandemic which may have contributed to the elevation in anxiety levels in these mothers.

In this study, mothers considered to have adequate information levels related to COVID-19 were found to have higher mean GAD-7 points compared to mothers who thought they did not have adequate information levels and this was statistically significant (p<0.05) (Table 5). A COVID-19 study supporting the findings of this study reported individuals had higher mean points for the awareness subdimension of the GAD-7 test including items like the individuals' 'awareness of changes in the body, interest in health, awareness of developing events' compared to other subdimensions (Ekiz, Iliman, & Donmez, 2020). Studies have shown that epidemic diseases induce severe anxiety and trauma among people (Fakari & Simbar, 2020, Wang et al., 2020). The perception of COVID-19 is thought to be associated with knowledge about the disease and reactions to the disease.

Findings obtained in the study found mothers experiencing anxiety related to the infant's health had higher mean GAD-7 points compared to mothers who were not worried (Table 5). With similar quality to these findings, there are studies reporting the infant health affects depression and anxiety levels (Ghorbani et al., 2014, Fakari & Simbar, 2020). The lack of full knowledge of how the virus emerged, inability to control it and creation of a serious potential threat on a global scale are thought to have caused mothers to experience high anxiety.

In the correlation between social support and psychological health, as perceived social support increases, psychological disorders like stress, anxiety and depression are stated to improve (Nnadozie & Nweke, 2017). In this study, there was a negative high-level correlation between GAD-7 mean points with mean MSPSS friend and family subscale points (Table 6). This finding shows that as mothers receive increased social support from family and friends, their anxiety levels will reduce. In a study by Schwab-Reese et al., (2017) with compatible results to the findings in this research, when stress and social support levels were assessed both independently and together at several time points, they were reported to be associated with depressive and anxiety symptoms. Alhasanat-Khalil, Fry-McComish, Dayton, C., Benkert, Yarandi, (2018)and Giurgescu, reported inadequate social support and postpartum anxiety caused anxiety and depression in mothers in the postpartum period. The study by Chavis (2016) reported that for worry and anxiety levels experienced in the postpartum period, the most important factor in a mother's feeling of competence was social support from friends and family.

Conclusion and Recommendations: In conclusion, during the COVID-19 pandemic, 96.9% of mothers experienced generalized

anxiety; as the age and educational level of mothers increased their perceived social support levels increased; and as perceived income levels decreased, anxiety levels were determined to increase. Additionally, anxiety levels of mothers who thought they had adequate information about COVID-19 were higher compared to mothers who thought their information was inadequate and mothers experiencing worry related to the infant's health had higher anxiety levels compared to mothers who were not worried. As the perceived social support levels fell, anxiety levels were found to increase. In line with this, the following recommendations are made:

- To provide telephone support or create online education or counseling platforms to reduce anxiety among mothers,
- To organize training programs including topics like infant health and mental health,
- Considering physical social support of mothers will naturally reduce during the COVID-19 pandemic, with high transmission risk and speed, precautions should be taken to provide education and counseling services to ensure mothers adjust to this process and to develop a support system for mothers in extraordinary circumstances.

Data Availability Statement: The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

References

Alhasanat-Khalil, D., Fry-McComish, J., Dayton, C., Benkert, R., Yarandi, H., & Giurgescu, C. (2018). Acculturative stress and lack of social support predict postpartum depression among US immigrant women of Arabic descent. *Archives of Psychiatric Nursing*, 32(4), 530-535. doi: org/10.1016/j.apnu.2018.02.005

Aktas, N., & Karacam, Z. (2017). Postpartumfatigue, self-care power of women and related factos. The Journal of Tepecik Education and Research Hospital, 27(3), 186-196. doi: 10.5222/terh.2017.186

Batman, D., & Şeker, S. (2019). The effect of web based education on the level of self-confidence and

- anxiety in care of parents of premature infants. Dokuz Eylul University E-Journal of Nursing Faculty, 12(2), 107-115.
- Boratav, B. H., Toker, Ö., & Küey, L., (2016). Postpartum depression and its psychosocial correlates: A longitudinal study among a group of women in Turkey. *Women Health*, 56(5), 502-21. doi: org/10.1080/03630242.2015.1101737
- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., Rubin, G.J. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet*, 395, 912-920. doi: org/10.1016/S0140-6736(20)30460-8
- Chan, J. F., Yuan, S., & Kok, K. H. (2020). A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person to person transmission: a study of a family cluster. *Lancet*, 395, 514-523. doi: org/10.1016/S0140-6736(20)30154-9
- Chavis, L. (2016). Mothering and anxiety: Social support and competence as mitigating factors for first-time mothers. *Social Work in Health Care*, 55(6), 461-480. doi: org/10.1080/00981389.2016.1170749
- Celen, R., & Tas Arslan, F. (2017). The anxiety levels of the parents of premature infants and related factors. *The Journal of Pediatric Research*, 4(2), 68-74. doi: 10.4274/jpr.65882
- Darlington, A. S., Morgan, J. E., Wagland, R., Sodergren, S., Culliford, D., Gamble, A., & Phillips, B. (2020). COVID-19 and children with cancer: Parents' experiences, anxieties, and support needs. *medRxiv*. doi: org/10.1101/2020.06.11.20128603
- Dong, Y., Mo, X., Hu, Y., Qi, X., Jiang, F., & Jiang, Z. (2020). Epidemiological characteristics of 2143 pediatric patients with 2019 coronavirus disease in China epidemiology of COVID-19 among children in China. *Pediatrics*. doi: org/10.1542/peds.2020-0702.
- Eker, D. Arkar, H. & Yaldiz, H. (2001). Factorial structure, validity, and reliability of revised form of the multidimensional scale of perceived social support. *Turkish Journal of Psychiatry*, 12(1),17-25
- Ekiz, T., Ilıman, E., & Donmez, E. (2020). Comparison of health anxiety level and control perception of COVID-19. *International Journal of Health Management and Strategies Research*, 6(1), 139-154.
- Fakari, F. R., & Simbar, M. (2020). Coronavirus pandemic and worries during pregnancy; a letter to editor. *Archives of Academic Emergency Medicine*, 8(1), 1-2.
- Ghorbani, M., Dolatian, M., Shams, J., & Alavi-Majd, H. (2014). Anxiety, post-traumatic stress disorder and social supports among parents of premature and full-term infants. *Iranian Red Crescent*

- *Medical Journal*, 16, 13461. doi: 10.5812/ircmj.13461
- Hong, H., Wang, Y., Chung, H.T., & Chen, C. J. (2020). Clinical characteristics of novel coronavirus disease 2019 (COVID-19) in newborns, infants and children. *Pediatrics & Neonatology*, 61(2), 131-132. doi: org/10.1016/j.pedneo.2020.03.001
- Konkan, R., Şenormancı, Ö., Güçlü, O., Aydın, E., & Sungur, M.Z. (2013). Obsessive compulsive disorder and obsessive beliefs. *Anatolian Journal of Psychiatry*, 13, 91-96.
- Li, Q., Guan, X., Wu, P., Wang, X., Zhou, L., & Tong, Y., (2020). Early transmission Dynamics in Wuhan, China, of novel corona virüs infected pneumonia. *The New England Journal of Medicine*. 382(13), 1199-1207. doi: 10.1056/NEJMoa2001316
- Mermer, G., Bilge, A., Yucel, U., & Ceber, E. (2010). Evaluation of Perceived Social Support Levels in Pregnancy and Postpartum Periods. *Journal of Psychiatric Nursing*, *1*(2), 71-76.
- Metin, A., & Pasinlioglu, T. (2016). Examination of the Relationship between Perceived Social Support and Prenatal Self Assessment in Pregnant. *International Refereed Journal of Gyneacological Diseases and Maternal Child Health*, 5, 10-17. doi: 10.17367/JACSD.2016516857
- Mizrak, B., Deniz, A.O., & Acikgoz, A. (2015). Anxiety levels of mothers with newborns in a neonatal intensive care unit in Turkey. *Pakistan Journal of Medical Science*, 31, 1176-81. doi: 10.12669/pjms.315.7792
- Mizumoto, K., Kagaya, K., Zarebski, A., & Chowell, G. (2020). Estimating the asymptomatic proportion of coronavirus disease 2019 (COVID-19) cases on board the Diamond Princess cruise ship, Yokohama, Japan, 2020. Eurosurveillance, 25(10): 2000180. doi: 10.2807/1560-7917.ES.2020.25.10.2000180
- Molloy EJ, Lavizzari A, Klingenberg C, Profit J, Davis A.S.,Mosca, F & The International Neonatal COVID Consortium. (2020). Neonates in the COVID-19 pandemic. Pediatric Research. doi: 10.1038/s41390-020-1096-y
- Nnadozie, J. C., & Nweke, G. E. (2017). Self esteem, social support and postpartum depression. *Journal of International Social Research*, *10*(51), 552-56. doi: org/10.17719/jisr.2017.1789
- Ovali, F. (2020). COVID-19 Infections in Newborns. Anatolian Clinic the Journal of Medical Science, 25(Supplement 1), 23-45. doi:10.21673/anadoluklin.708589
- Rodriguez-Morales, A. J., Cardona-Ospina, J. A., Gutierrez-Ocampo, E., VillamizarPena, R., Holguin-Rivera, Y., Escalera-Antezana, J. P. (2020). Clinical, laboratory and imaging features of COVID-19: a systematic review and meta-analysis. *Travel Medicine and Infectious Disease*, 101623, 1-13. doi: org/10.1016/j.tmaid.2020.101623

- Schwab-Reese, L. M., Schafer, E. J., & Ashida, S. (2017). Associations of social support and stress with postpartum maternal mental health symptoms: Main effects, moderation, and mediation. *Women & Health*, 57(6), 723-740.
- Spitzer, R. L., Kroenke, K., Williams, J. B.W, & Love, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of Internal Medicine*, 166, 1092-1097. doi: 10.1001/archinte.166.10.1092
- Sahin, E.M., & Altınel, T., (2010). Perceived Social support and affecting factors in women living in Edirne. *Turkiye Klinikleri Journal Medical Science*; 30(3), 864-870. doi: 10.5336/medsci.2008-9772
- Simsek, H. N., Demirci, H., & Bolsoy, N. (2018). Social Support Systems and Midwifery. Journal of Duzce University Health Sciences Institute, 8(2), 97-103
- Taskin L. (2020). Birth and Woman Health and Diseases Nursing. (16th published). Akademisyen Publishing, Ankara. P.487-488.
- Turkoglu, N., Celik, A. S., & Pasinlioglu, T. (2014). Determining pospartum social support needs of mothers and the support they received. *Journal of Education and Research in Nursing*, 11(1), 18-24.
- Ust, Z.D., & Pasinlioglu, T. (2015). Determination of anxieties related to delivery and postpartum period in primiparous and multiparous pregnant women. *Journal of Health Sciences and Professions*, 2(3), 306-317. doi: 10.17681/hsp.96963
- Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, et al. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) Epidemic among the general population in China. *Int J Environ Res Public Health*. 2020;**17**(5). doi: 10.3390/ijerph17051729

- Wei, M., Yuan, J., Liu, Y., Fu, T., Yu, X., & Zhang, Z.J. (2020). Novel coronavirus infection in hospitalized infants under 1 year of age in China. *Journal American Medical Assosication*, 323 (13), 1313-14. doi: org/10.1001/jama.2020.2131.
- WHO, 2020. Coronavirus disease (COVID-19) pandemic. https://www.who.int/emergencies/diseases/novel-coronavirus-2019? (Accessed from 10 September, 2020)
- Wu, Z., & McGoogan, J. M. (2020). Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. *Journal of American Medical Assosication*, 323(13), 1239-1242. doi:10.1001/jama.2020.2648
- Yildirim, A., Hacihasanoglu, R., & Karakurt, P. (2011). The relationship between postpartum depression and social support and affecting factors. *International Journal of Human Sciences*, 8(1), 31-46.
- Yildiz, D., & Akbayrak, N. (2014). The effect of education and counseling services given to primipara mothers after childbirth on baby care, anxiety levels and maternal role. *Gülhane Medical Journal*, 56(1), 36-41.
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., Farley, G. K. (1988). The multidimensional scale of perceived social support. Journal of personality assessment, 52(1), 30-41