



Evaluation of Mothers' COVID-19 Fear Situations and Attitudes to COVID-19 Vaccine

Annelerin COVID-19 Korku Durumları ve COVID-19 Aşısına Karşı Tutumlarının Değerlendirilmesi

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Abstract

Objective: The aim of this study was to evaluate mothers' fears of COVID-19 and their attitudes towards the COVID-19 vaccine.

Material and Methods: This descriptive cross-sectional study was conducted with 305 mothers with children aged 0-14 years in the family health centre in Zonguldak city centre between 01.01.2022 and 01.05.2022. Personal Information Form, COVID-19 fear scale (CFS) and Ghana vaccine attitudes scale (GVAS) were used to collect data.

Results: In this study, 3.6% of the mothers did not receive the COVID-19 vaccine. Mothers' fear of COVID-19 was moderate and their hesitancy to get vaccinated was low. There was no relationship between the mothers' fear of COVID-19 and their attitudes towards the vaccine ($p=0.824$). Fear of COVID-19 increases as mothers' negative attitudes towards vaccine benefits ($r=-0.160$, $p<0.001$) and past vaccination experiences ($r=0.796$, $p<0.001$) increase. Mothers (20.32 ± 3.22) who were undecided about being vaccinated against COVID-19 had more negative attitudes towards vaccination than those who thought that vaccination should be mandatory (16.59 ± 3.27) ($p<0.001$). Those who thought that the side effects of COVID-19 affected the vaccine decision (19.43 ± 4.07) had a more negative attitude towards the vaccine than those who thought that they did not (17.42 ± 3.81) ($p<0.001$).

Conclusion: It was found that the COVID-19 vaccination rates of the mothers were quite high, they had a moderate fear of COVID-19 and their hesitations towards the COVID-19 vaccine were low. It is thought that past experiences of mothers regarding COVID-19 increase the tendency to get vaccinated.

Keywords: Parent, COVID-19 fear, vaccination attitudes

Öz

Giriş: Bu çalışmanın amacı, annelerin COVID-19 korku durumları ile COVID-19 aşısına karşı tutumlarını değerlendirmektir.

Gereç ve Yöntemler: Tanımlayıcı kesitsel tipte olan bu araştırma, 01.01.2022-01.05.2022 tarihleri arasında Zonguldak il merkezindeki aile sağlığı merkezlerinde bulunan 0-14 yaş çocuğu olan 305 anne ile gerçekleştirilmiştir. Verilerin toplanmasında; kişisel bilgi formu, COVID-19 korkusu ölçeği (CKÖ) ve Ghana aşı tutumları ölçeği (GATÖ) kullanılmıştır.

Bulgular: Bu çalışmada annelerin %3.6'sı COVID-19 aşısı olmamıştır. Annelerin COVID-19'a karşı korkusu orta düzeydeydi ve aşılanmaya yönelik tereddütleri düşük düzeydeydi. Annelerin COVID-19'a ilişkin yaşadıkları korkuyla aşıya yönelik tutumları arasında ilişki yoktu ($p=0.824$). Annelerin, aşının faydalarına ($r=-0.160$, $p<0.001$) ve geçmiş aşı deneyimlerine yönelik olumsuz tutumu ($r=0.796$, $p<0.001$) arttıkça COVID-19 korkusu da artmaktadır. COVID-19'a aşılanma konusunda kararsız olan annelerin (20.32 ± 3.22), aşılanmanın zorunlu olması gerektiğini düşünenlere (16.59 ± 3.27) göre aşıya yönelik tutumları daha olumsuzdu ($p<0.001$). COVID-19 yan etkilerinin aşı kararını etkilediğini düşünenler (19.43 ± 4.07) etkilemediğini düşünenlere (17.42 ± 3.81) göre aşıya yönelik tutumları daha olumsuzdu ($p<0.001$).

Sonuç: Annelerin COVID-19 aşılanma oranları oldukça yüksek, COVID-19'a karşı korku yaşamaları orta ve COVID-19 aşısına yönelik tereddütlerinin düşük düzeyde olduğu bulunmuştur. Annelerin COVID-19'a ilişkin geçmiş deneyimleri aşı olma eğilimini arttırdığı düşünülmektedir.

Anahtar Kelimeler: Ebeveyn, COVID-19 korkusu, aşı tutumu

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Introduction

COVID-19 is a type of virus disease that first emerged in Wuhan, China in 2020. It has caused a pandemic all over the world by spreading rapidly from person to person through droplet or direct contact. When COVID-19 is transmitted to humans, it manifests itself with basic symptoms such as fever, cough, sore throat, fatigue, joint pains. There are also people who do not show symptoms. If left untreated, it can result in death by involving many organs, especially the lungs (1).

Children have lower mortality rates due to COVID-19 than adults, and children can survive COVID-19 infection with milder symptoms than adults (2,3). With the return of children to school after curfews and public transportation bans are lifted, transmission among children has increased rapidly and the incidence rate among children has risen in parallel with that of adults (4). This situation poses a risk for society and also for the family members they live with (5). Recently, the more severe course of the disease in children and the number of deaths suggest that parents' anxiety and fear levels may increase (6). It is thought that parents' fear of COVID-19 may cause a change in their attitudes towards the vaccine developed against COVID-19. Parents mostly learn about COVID-19 disease and vaccines through social media. Therefore, misinformation sharing and statements of anti-vaccine communities may greatly affect parental attitudes towards COVID-19 vaccines and their level of fear against the disease (7). In our country, with the introduction of COVID-19 vaccine to all children over the age of 12, it is thought that mothers' fear of COVID-19 may be determinant in their attitudes towards the vaccine. Therefore, the aim of this study was to evaluate mothers' fear of COVID-19 and their attitudes towards COVID-19 vaccine.

Materials and Methods

Type of Research

The study was of descriptive cross-sectional type.

Population and Sample of the Study

The population of the study was conducted in three family health centers in Zonguldak province center between 01.01.2022 and 01.05.2022. Purposive sampling method was used and mothers who met the inclusion criteria were invited. The criteria for inclusion of the mothers in the study were: 1) having a child aged 0-14 years, 2) voluntarily agreeing to participate in the study, 3) not having a mental disability, 4) knowing how to read and write. There were 1620 mothers who met the inclusion criteria at the family health centers on the specified dates, and 1427 of these mothers were invited to participate in the study. As a result of the invitation, positive feedback was received from 305 mothers and the questionnaires were completed completely. According to the sample calculation (error rate 5%, confidence interval 95%), 303 mothers were sufficient for the

study. The required sample size was reached by forming 305 mothers as the sample of the study.

Data Collection

The data of the study were collected by face-to-face interview technique. The questionnaire was administered to mothers who had children aged 0-14 years and who applied to the family health centers where the study was conducted for any reason. Before the application of the questionnaire, the informed consent form was filled out, and the mothers were informed about the purpose of the study and the confidentiality of the data. Mothers who gave consent were included in the study. The administration of the questionnaire took an average of 15 minutes. Personal information form, COVID-19 fear scale (CFS) and Ghana vaccine attitudes scale (GATS) were used to collect the data.

Personal Information Form: The personal information form, which was prepared in line with the literature, was used to determine the knowledge status of mothers to determine their attitudes towards COVID-19 and vaccination.

COVID-19 Fear Scale (CFS): The CFS was developed by Ahorsu et al (8). The scale was developed in 2020 and consists of seven items, all of which are grouped into a single dimension. Each item in the scale is designed as a 5-point Likert-type scale and it is expected to be marked between "1= Strongly Disagree" and "5= Strongly Agree" for each item. The total score that can be obtained from the scale varies between 7-35 points. Increasing scores on the scale indicate that the participant's level of fear about COVID-19 is high. The adaptation of the CFS into Turkish was conducted by Artan et al., the researcher (9). Cronbach's alpha reliability coefficient of the scale was found to be 0.867 (9). In this study, the Cronbach's alpha reliability coefficient of the scale was found to be 0.790.

Ghana Vaccine Attitudes Scale (GVAS): The vaccine attitudes scale was developed by Wallace et al (10). The scale consists of 11 3-point Likert-type items measuring parents' attitudes towards vaccines. The scale has five sub-dimensions: 1) benefits of vaccination (items 1 and 2), 2) past vaccination behaviour (items 3 and 4), 3) efficacy and safety (items 5 and 6), 4) awareness of vaccine-preventable diseases (items 7 and 8) and 5) trust (items 9, 10 and 11). Each item in the vaccine attitudes scale is scored as agree= 1, undecided= 2, disagree= 3. The score obtained from the scale is calculated by summing the items. The total score that can be obtained from the scale varies between 11-33 points. A score of 11 indicates that parents have a positive attitude towards vaccination, while a score of 33 indicates a negative attitude. As the score obtained from the scale increases, parents show negative attitudes towards vaccination. The adaptation of the scale into Turkish was carried out by Ceylan et al (11). The Cronbach's alpha coefficient of the scale is reported to be 0.66 (11). In this study, the Cronbach's alpha reliability coefficient of the scale was found to be 0.724.

Data Analysis

Statistical Package for Social Sciences program (SPSS-24) was used to evaluate the data. Descriptive statistical methods (number, percentage, mean, standard deviation), Kruskal-Wallis H test and Mann-Whitney U test were used. The relationship between mothers' CFS and GVAS scores was analyzed by Spearman correlation test. The results were evaluated at 95% confidence interval and $p < 0.05$ was considered significant.

Ethics

Ethics committee approval (Date: 30.11.2021, Decision no: 393) was obtained from the human research ethics committee of a university before the start of the study. The mothers who participated in the study were informed about the research, and it was stated that the decision whether to participate in the research or not was entirely their own, that the data collected from this study would only be used within the scope of the research, and that confidentiality would be taken as a basis. Participation was completely voluntary.

Results

Of the mothers who participated in the study, 48.2% were between 31-40 years of age and approximately one third (35.1%) were university graduates. More than half of the mothers' children (52.4%) were between 13 months and three years of age, 30.1% between 0-12 months, 16.3% between 4-6 years, 0.7% between 13-18 years and 0.3% between 7-12 years. It was found that 93.8% of the children did not have any chronic disease and 4.6% had a diagnosis of asthma (Table 1).

Approximately half of the mothers (49.8%) had at least one member of their household diagnosed with COVID-19. Of the mothers, 54.4% stated that they received three doses of COVID-19 vaccine, 37.0% received two doses and 4.9% received a single dose. As the reason for COVID-19 vaccination, 48.2% of the mothers stated protection from infection, 35.1% stated psychological pressure, 29.2% stated not having a PCR test, 17.7% stated fear, 16.4% stated professional obligation, 15.7% stated strengthening immunity, and 1.6% stated necessity. The sources of information about COVID-19 were social media/internet with 37.7%, television with 20.7%, physicians with 24.6% and nurses with 2.3%. Among the reasons for not getting vaccinated, mothers mostly (30.2%) stated that they had problems with trust in the vaccine, while 57.7% of those who were vaccinated stated that they had no idea why they were vaccinated. While 48.2% of the mothers stated that COVID-19 vaccination should be offered as an option, 42.6% stated that it should be mandatory (Table 2).

In Table 3, the characteristics of the mothers regarding the COVID-19 pandemic process and the mean scores of the GVAS were compared. Those who received a single dose of COVID-19

Table 1. Sociodemographic characteristics of the mothers and children

| Sociodemographic characteristics | n | % |
|---|-----|------|
| Mother's age | | |
| Under 30 years | 110 | 36.1 |
| 31-40 years | 147 | 48.2 |
| Over 41 years | 48 | 15.7 |
| Mother's education status | | |
| Literate | 5 | 1.6 |
| Elementary school | 50 | 16.4 |
| High school | 89 | 29.2 |
| Associate degree | 54 | 17.7 |
| Bachelor's degree | 107 | 35.1 |
| Child's age | | |
| 0-12 months | 92 | 30.1 |
| 13 months-3 years | 160 | 52.4 |
| 4-6 years | 50 | 16.3 |
| 7-12 years | 1 | 0.3 |
| 13-18 years | 2 | 0.7 |
| Presence of chronic disease in the child | | |
| Present | 19 | 6.2 |
| None | 286 | 93.8 |
| Diagnosis of the chronic disease of the child | | |
| Asthma | 14 | 4.6 |
| Bronchitis | 1 | 0.3 |
| Epilepsy | 1 | 0.3 |
| Type I DM | 2 | 0.7 |
| Seasonal allergy | 1 | 0.3 |

vaccine (23.26 ± 4.00) compared to those who received two doses (17.04 ± 3.48) ($p = 0.047$), those who were undecided about COVID-19 vaccine preference (20.32 ± 3.22) compared to those who thought it should be mandatory (16.59 ± 3.27) ($p < 0.001$), those who thought that COVID-19 side effects affected the decision to vaccinate (19.43 ± 4.07) compared to those who thought that they did not (17.42 ± 3.81) ($p < 0.001$), those who thought that the reason for vaccination was necessity (22.33 ± 3.39) compared to those who thought it was for prevention (18.69 ± 2.78) ($p = 0.016$) and those who thought that the reason for vaccination was necessity (22.33 ± 3.39) compared to those who had no opinion (17.06 ± 4.07) ($p = 0.004$) had higher GVAS scores (Table 3).

No significant correlation was found between the scores of the mothers on both scales ($r = -0.004$, $p = 0.824$). As the GVAS benefits of vaccination ($r = -0.160$, $p < 0.001$) subscale score decreased and the past vaccination behavior ($r = 0.796$, $p < 0.001$) subscale score increased, the scores on the CFS increased (Table 3).

Table 2. Comparison of mothers' characteristics related to the COVID-19 pandemic process and mean scores of GVAS and CFS

| Characteristics of mothers towards the COVID-19 pandemic process | n | % | Ghana vaccine attitudes scale | Significance/Difference |
|--|-----|------|-------------------------------|--|
| | | | Mean ± SD | |
| Previous COVID-19 diagnosis in the household | | | | |
| None | 153 | 50.2 | 18.15 ± 4.17 | Z= -0.596; Man-U= 11171.500; p= 0.551 |
| Present | 152 | 49.8 | 17.87 ± 3.81 | |
| COVID-19 source of information | | | | |
| Physician (1) | 75 | 24.6 | 18.13 ± 3.56 | KW= 1.879; p= 0.866 |
| Nurse (2) | 7 | 2.3 | 17.71 ± 3.19 | |
| Official bodies (3) | 46 | 15.1 | 18.06 ± 4.01 | |
| Television (4) | 63 | 20.7 | 18.42 ± 4.60 | |
| Social media/Internet (5) | 112 | 36.7 | 17.66 ± 3.99 | |
| Friend/Neighbour/Relative (6) | 2 | 0.7 | 20.00 ± 1.41 | |
| COVID-19 vaccination status | | | | |
| No (1) | 11 | 3.6 | 22.90 ± 2.70 | KW= 43.685; p< 0.001 2-4, p= 0.047 |
| Yes, single dose (2) | 15 | 4.9 | 23.26 ± 4.00 | |
| Yes, two doses (3) | 113 | 37 | 18.26 ± 3.90 | |
| Yes, three doses (4) | 166 | 54.4 | 17.04 ± 3.48 | |
| Preference of Vaccination | | | | |
| Preferences should be sought (1) | 147 | 48.2 | 18.82 ± 4.28 | KW= 30.867; p< 0.001 2-3, p< 0.001 |
| Should be mandatory (2) | 130 | 42.6 | 16.59 ± 3.27 | |
| Undecided (3) | 28 | 9.2 | 20.32 ± 3.22 | |
| Is vaccination affected by experiencing side effects | | | | |
| Yes | 89 | 29.2 | 19.43 ± 4.07 | Z= -4.038 Man-U= 6800.500; p< 0.001 |
| No | 216 | 70.8 | 17.42 ± 3.81 | |
| Reasons to get vaccinated | | | | |
| Protection (1) | 55 | 48.2 | 18.69 ± 2.78 | KW= 46.081; p< 0.001 1-3, p= 0.016; 3-8, p= 0.004 |
| Strengthening the immune system (2) | 21 | 15.7 | 19.57 ± 2.97 | |
| Obligation (3) | 18 | 1.6 | 22.33 ± 3.39 | |
| Professional obligation (4) | 4 | 16.4 | 16.50 ± 4.65 | |
| Not getting a PCR test (5) | 1 | 29.2 | 25.00 ± 2.39 | |
| Fear (6) | 4 | 17.7 | 21.75 ± 4.27 | |
| Pressure (7) | 1 | 35.1 | 16.00 ± 2.91 | |
| No idea (8) | 190 | 57.7 | 17.06 ± 4.07 | |
| Reasons for not getting vaccinated | | | | |
| Insufficient scientific evidence of side effects | 3 | 5.2 | 18.33 ± 0.57 | KW= 3.923; p= 0.687 |
| I do not trust | 3 | 30.2 | 20.00 ± 4.35 | |
| I am breastfeeding | 1 | 15.1 | 22.00 ± 2.18 | |
| I had COVID-19 | 1 | 6.9 | 22.00 ± 2.54 | |
| I think that I may have it without the vaccine | 1 | 38 | 19.00 ± 1.82 | |
| No idea | 2 | 9.8 | 19.00 ± 2.82 | |

Table 3. The relationship between mothers' mean scores on the Ghana vaccine attitudes scale and COVID-19 fear scale

| | | Ghana vaccine attitudes scale | | | | | |
|-----------------------------|---|-------------------------------|---------------------------|-----------------------|---|--------|--------|
| | | Benefits of vaccination | Past vaccination behavior | Efficiency and safety | Awareness of vaccine-preventable diseases | Trust | Total |
| COVID-19 fear scale (Total) | r | -0.160* | 0.796* | 0.006 | 0.014 | -0.014 | -0.004 |
| | p | 0.024 | 0.003 | 0.763 | 0.583 | 0.592 | 0.824 |

*p< 0.05.

Discussion

This study was conducted to evaluate mothers' fear of COVID-19 and their attitudes towards COVID-19 vaccination. Mothers had a moderate level of fear of COVID-19 and their hesitation towards vaccination was at a low level. In the study, there was no relationship between mothers' fear of COVID-19 and their attitudes towards vaccination. As the negative attitude towards the benefits of vaccination and past vaccination experiences increased, the fear of COVID-19 decreased. Mothers who thought that vaccination against COVID-19 should be mandatory had more negative attitudes towards vaccination than those who were undecided about vaccination. In addition, mothers who experienced side effects due to COVID-19 vaccination had more negative attitudes towards vaccination than those who did not. Similar studies show that individuals' fears about COVID-19 have an effect on their attitudes towards vaccination (12,13).

According to the COVID-19 fear scale, it was determined that mothers had a low level of fear of COVID-19. Similarly, it is stated that mothers' fear of Coronavirus disease was found to be low during the pandemic process (14). However, research shows that COVID-19 has a greater negative psychological impact in women (15,16). Studies from different countries also indicate that fear of COVID-19 is at a moderate level (17,18). It is thought that the mothers' level of fear of COVID-19 was low due to the passage of time since the onset of the COVID-19 pandemic during the period when the research was conducted. The uncertainty and high mortality rates at the beginning of the pandemic decreased during the research period. In addition, it is thought that vaccination may also cause the COVID-19 fear level to decrease.

In the study, mothers' fear of COVID-19 was not associated with their attitudes towards vaccination. As the mothers' negative attitudes towards the benefits of vaccination and past vaccination experiences increase, their fear of COVID-19 also increases. Studies have shown that individuals with a high level of fear of COVID-19 are more hesitant to be vaccinated (19,20). The fact that COVID-19 vaccines are not effective on COVID-19 disease may negatively affect the attitude towards vaccination (21,22). In a study conducted in the United States, it has been reported that the increase in the rate of adverse reactions to COVID-19 vaccines decreased the rate of COVID-19

vaccination. It is also noted that factors such as past experiences with vaccines may not be associated with vaccination (23). In the same study, following the announcement that vaccines are 95% effective, it is emphasized that small but significant increases in the likelihood of vaccination were observed (23).

Mothers who experienced side effects due to COVID-19 vaccine had more negative attitudes towards vaccination than those who did not. Side effects such as local allergic effects, headache, myalgia, fever, fever, chills, general malaise may occur after COVID-19 vaccination (24,25). The main objection most parents have to vaccination is the possibility of vaccine side effects (26). Parents may be reluctant to get themselves and their children vaccinated because of the side effects COVID-19 vaccines have caused and will cause (27,28). Unknown interactions of COVID-19 vaccines with other drugs and substances may negatively affect parents' attitudes towards vaccines. Side effects and unknown interactions of COVID-19 vaccines may negatively affect parents' attitudes towards vaccines at a higher rate than fear of COVID-19 (29). Information on the side effects and unknown interactions of vaccines will help parents to have more positive attitudes towards vaccination and thus increase the vaccination rates of their children (30).

Mothers who thought that COVID-19 vaccination should be done for protection and that COVID-19 vaccination should be mandatory had more positive attitudes towards vaccination against COVID-19 than those who had no idea about the reason for vaccination against COVID-19. The attitudes of parents who do not have information about the importance of vaccination and the content of vaccines can be negative (31). In a study conducted in our country, the main reason for this situation has been shown as lack of information or low level of maternal education. It is thought that mothers with a low level of education may be less afraid of getting the virus due to lack of information about the effects of COVID-19 (27).

Conclusion

According to the results of the study, there was no relationship between mothers' fear of COVID-19 and their attitudes towards vaccination. However, as mothers' negative attitudes towards the benefits of vaccination and past vaccination experiences increase, their fear of COVID-19 also increases. Mothers who were undecided about vaccination

against COVID-19 had more negative attitudes towards vaccination. Mothers who experienced side effects due to COVID-19 vaccination had more negative attitudes towards vaccination than those who did not. There is a possibility that mothers may change their attitudes if they have more information about COVID-19 vaccines and have more confidence in vaccines. In line with the findings obtained in this study, it is recommended that healthcare professionals, especially pediatric nurses, who have an important role in well-child follow-up, should focus on mothers who hesitate or refuse immunization and vaccination. It is also recommended that healthcare professionals should provide information on vaccine safety evidence, expected benefits of vaccines and potential harms of infection within the scope of informing mothers. In this way, it is predicted that mothers who receive accurate information from the right source will show healthy attitudes and behaviors about vaccination.

Ethics Committee Approval: This study approval was obtained from Zonguldak Bülent Ecevit University Human Research Ethics Committee (Decision no: 2014/08-13, Date: 29.05.2014).

Informed Consent: Patient consent was obtained.

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