BREASTFEEDING SELF-EFFICACY IN PREGNANT WOMEN AND FACTORS AFFECTING IT IN THE COVID-19 PANDEMIC: A DESCRIPTIVE AND CORRELATIONAL STUDY

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Abstract

Objective The study has been conducted to identify the factors affecting the breastfeeding self-efficacy of pregnant women in the COVID-19 pandemic. Design A descriptive and correlational design has been used in this study. Setting The population of the study comprised all the pregnant women applying to the obstetrics polyclinic of a university hospital. Sample The study sample consisted of 320 pregnant women's. Methods The data of the study were collected by using an Information Form and the Prenatal Breastfeeding Self-Efficacy Scale. Main Outcome Measures Breastfeeding self-efficacy. Results The seven variables having a significant effect on the pregnant women's Prenatal Breastfeeding Self-Efficacy Scale scores, in the order of descending importance, have been determined as follows; being knowledgeable on COVID-19, thinking breastfeeding to be beneficial for the baby, going to prenatal care checkups on time, pregnancy duration, educational status , age, and receiving breastfeeding training in the COVID-19 pandemic. Conclusion Although the study findings show similarities to those of the studies conducted before the pandemic analyzing breastfeeding self-efficacy and the factors affecting it, it is an important aspect that this study has been carried out during the COVID-19 pandemic. This study is believed to contribute to the literature and guide interventional studies to be conducted in the COVİD-19 pandemic by evaluating the breastfeeding self-efficacy levels of mothers and the factors affecting them.

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Conflict of interest

The authors have no conflicts of interest to declare.

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Key words: COVID-19 Pandemic, Breastfeeding self-efficacy, Pregnancy

Tweetable Abstract World Health Organization has deemed breastfeeding to be safe under all circumstances in the COVID-19 pandemic.

Introduction

Breast milk is the most ideal nutrition for babies under any condition, be it natural disasters or even pandemics. The fact that breast milk is especially an important antibody source makes it mandatory for breastfeeding to be provided and maintained, especially in these days when we are experiencing the COVID-19 pandemic. Numerous factors affecting breastfeeding, such as the mother's age, educational status, economical status, working status, parity, planned pregnancy, breastfeeding and inefficient breast milk are mentioned in the literature.[1-6] One of these factors is the mother's breastfeeding self-efficacy.[4,7] Breastfeeding self-efficacy affects whether or not the mother will breastfeed, her thoughts on breastfeeding, and her coping skills with emotional difficulties she is likely to encounter during this process.[8] Mothers with high

breastfeeding self-efficacy tend to start breastfeeding early and maintain it even if they encounter difficulties during breastfeeding, while mothers with relatively lower self-efficacy tend to have low self-confidence and inefficient coping skills.[9] To develop her breastfeeding self-efficacy, the mother should be encouraged to breastfeeding from the prenatal period, informed well, willing to breastfeed her baby, and able to decide on this matter.[10] Therefore, the study has been conducted to identify the factors affecting the breastfeeding self-efficacy of pregnant women in the COVID-19 pandemic.

Methods

Study design and sample

A descriptive and correlational design has been used in this study. The population of the study comprised all the pregnant women applying to the obstetrics polyclinic of a university hospital. No study was observed which investigated the effects of independent variables on the prenatal breastfeeding self-efficacy of pregnant women, which is regarded to be the primary result of this study, and as such, no results were obtained which could be used in the sample calculation. Having predicted the effect of independent variables on pregnant women's prenatal breastfeeding self-efficacy scale scores to be f2: .08 (small effect) based on the multiple regression analysis results, it was determined that at least 285 pregnant women should participate in the study as per the sample number calculation done on the G*Power (3.1.9.2) software with 5% alpha margin of error (two-sided) and 90% power. Taking into account the possibility of losses to occur during the data collection process, it was decided that 314 pregnant women would participate in the study, 10% more than the number found in the sample number calculation. Based on the value of R2: .25 obtained from the regression analysis which determined seven independent variables to have an effect on pregnant women's prenatal breastfeeding self-efficacy scores, regarded to be the primary result of this study, the effect size and the power were found to be f2: .33 (medium effect) and 1.00 (100%) respectively in the post hoc power analysis done on the G*Power (3.1.9.2) software, and the sample number of the study was determined to be sufficient. The study was conducted in a random sampling design, one of the non-probability sampling methods, choosing among pregnant women applying to the obstetrics polyclinic of a university hospital. Pregnant women who were in their third trimester (27^{th} pregnancy week and above), had a single and healthy fetus, had a spontaneous pregnancy and had no health problems were included in the study.

Data collection

The data of the study were collected by using an Information Form developed by the researchers in line with the literature[4,6,7,12,13] and the Prenatal Breastfeeding Self-Efficacy Scale. The Information Form created for pregnant women consists of 35 questions in total regarding their sociodemographic, obstetric, breastfeeding, and COVID-19 related information. The Prenatal Breastfeeding Self-efficacy Scale (PBSES) was created by Wells et al. (2006) to determine the breastfeeding self-efficacy perceptions of pregnant women in their prenatal period. The Cronbach's alpha coefficient of the scale is 0.89.[14] The validity and reliability of the scale into Turkish was conducted by Aydın (2018), and its Cronbach's alpha coefficient was found to be 0.85. The scale is evaluated with a 5-Likert type system. The minimum score to be obtained from the scale is 20, while the highest is 100. The higher the obtained score from the scale is, the higher the breastfeeding self-efficacy is reflected to be.[15] The Cronbach's alpha coefficient of PSES in this study was determined to be .90 for the whole scale, and for its subscales, .76 for the general information subscale, .82 for the skills and desires subscale, .74 for the breastfeeding near other people and sense of shame during breastfeeding subscale, and .64 for the social pressure during breastfeeding subscale. The pregnant women visiting the polyclinic for their routine prenatal checks were informed about the objective of the study and their verbal approvals were obtained after their examination.

Data analysis

The number, percentage, mean, and standard deviation values are provided in the descriptive statistics of the study data. The numeric data fitness for normal distribution was evaluated with skewness (between -1.16 and 1.33) and kurtosis (between -.55 and 1.23) and was determined to have a normal distribution. To compare the differences among the pregnant women's mean scores of PBSES based on independent variables,

the t-test and Mann-Whitney U test (n<30) were used in independent groups based on the sample number in two-group variables, and one-sided variance analysis (advanced analysis Tukey HSD) and Kruskal-Wallis test analysis were used for independent groups in the variables with three or more groups. The relation between the numeric independent variables and the pregnant women's PSES scores was analyzed with method. The independent variables having an effect on PBSES scores in primary analyses were evaluated with the multiple regression (backward method) analysis. The significance level was accepted to be p<.05.

Results

The pregnant women were between 18 and 43 years of age; 44.7% were 25 or younger, 47.2% were literate/elementary school graduates, 31.3% were high school graduates, 21.5% held a bachelor's degree or above, and 89.4% non-working. Among their partners, 45.9% were literate/elementary school graduates, 33.8% were high school graduates, 20.3% held a bachelor's degree or above, and 95.9% were employed. The couples' marriage duration was 6.26±5.48. The gestational week of the women was 33.25±3.66 weeks, and 33.8% were primiparous and 66.2% were multiparous. The majority of the pregnant women did not have a history of miscarriage (65.3%) or abortion (79.1%). When asked about which sex they desired for their babies, 19% answered female, 13% answered male, and 68% did not mind. When asked about the sex of their babies, 40.7% answered female, 51.2% answered male, and 8.1% said that they did not know. All the pregnant women thought of breastfeeding after giving birth, 96.3% thought that breastfeeding was beneficial for the mother, and 91.9% thought that it was beneficial for the baby. During the COVID-19 pandemic, 25.9% of the pregnant women received breastfeeding training, while 74.1% did not.

When questioned about their knowledge of COVID-19, 80.9% claimed to be knowledgeable about COVID-19, while 19.1% claimed to be partially knowledgeable about the subject matter. 58.1% of the pregnant women stated their information source to be social media/internet, while 39.4% and 2.5% expressed their information sources to be TV and health personnel respectively. 84.1% stated that they isolated themselves at their homes and 98.4% claimed to obey mask/social distance/hygiene rules during the pandemic.

The scores obtained from PBSES ranged between 27 and 100, and the mean score value was found to be 79.08±13.86. Upon analyzing the pregnant women's PBSES scores based on their age groups, the mean score of the pregnant women aged 26 or older was found to be significantly higher than that of the pregnant women aged 25 or younger (p<.05, Table 2). It was also determined that the pregnant women holding a bachelor's degree or above had a significantly higher PBSES mean score than the pregnant women graduating from a high school or below (p<.05), and the difference between the two groups was highly significant (p<.001, Table S2). The working pregnant women were found to have higher mean scores than the non-working ones, and the difference between the two groups was highly significant (p<.01, Table S2).The pregnant women whose partners had a bachelor's degree or higher were found to have higher PBSES mean scores than the pregnant women whose partners were high school graduates or below, and the difference between the two groups was significant (p<.05, Table S2).

The pregnant women with a history of abortion were determined to have higher mean scores than the ones with no history of abortion, and the difference between the two groups was highly significant (p<.01, Table S2). The pregnant women who did not mind about the sex of their babies were determined to have higher PBSES mean scores compared to the ones desiring to have a female baby, and the difference between the two groups was regarded to be significant (p<.05, Table S2).

The pregnant women who visited the polyclinic for their prenatal care checkups on time were found to have higher PBSES mean scores than the ones who did not, and the difference between the two groups was regarded to be highly significant (p<.01, Table 2).

It was seen that the pregnant women who thought breastfeeding to be beneficial had higher PBSES mean scores than those who were indecisive about the benefits of breastfeeding; however, the difference between the two groups was not deemed to be significant (p>.05, Table S3).It was also found that the pregnant women who thought breastfeeding to be beneficial for the baby had higher PBSES mean scores than those who were indecisive about the benefits of breastfeeding for the baby, and the difference between the two groups was

highly significant (p<.01, Table S3). The pregnant women who received breastfeeding training during the COVID-19 pandemic were determined to have higher PBSES mean scores than those who did not receive such training, and the difference between the two groups was found to be significant (p<.05, Table S3).

It was found that the pregnant women who were knowledgeable about COVID-19 had higher PBSES mean scores compared to those who were not, and the difference between the two groups was found to be highly significant (p<.001, Table 2).

The pregnant women who thought that the pandemic did not affect their pregnancy were found to have h significantly higher PBSES mean scores than the pregnant women who thought otherwise (p<.05, Table 2).

No significant difference was found between the pregnant women's marriage duration and their PBSES scores (r: -.05, p>.05, Table 3). A weak, negative, and statistically highly significant relation was found between the gestational week of the pregnant women and their PBSES (r: -.16, p<.01, Table 3). As the gestational week the pregnant women increased, their PBSES scores decreased. A linear multiple regression analysis (backward method) was conducted to evaluate altogether the effects of 13 independent variables determined to affect the PBSES scores in primary analyses. No high-level autocorrelation was found among the independent variables included in the regression model based on the correlation analysis and the multicollinearity statistics (Table 3).

Among the independent variables included in the regression model, five independent variables, namely employment status, thinking the pandemic to have an effect on pregnancy, partner's educational status, desired baby sex, and abortion history, were excluded from the regression model in order since they did not have sufficient effect on PBSES Scores (p>.05). The importance of the remaining seven variables having a significant effect on the pregnant women's PBSES scores based on the β coefficient in order (from the most important to the least important) is as follows; status of being knowledgeable on COVID-19, thinking breastfeeding to be beneficial for the baby (p<.001), visiting the polyclinic for prenatal care checkups on time, gestasyonel week, educational status (p<.01), age, and status of having received any training on pandemic (p<.05). These seven independent variables in question explained the change (variance) in the pregnant women's PBSES scores by 25% (Table 2).

The PBSES scores of the pregnant women knowledgeable on COVID-19 were higher by 8.14 than those who were partly knowledgeable on the subject matter. The scores of the pregnant women thinking breastfeeding to be beneficial for the baby were higher by 9.10 than those who were indecisive about its benefits for the baby. The scores of the pregnant women going to their prenatal care checkups on time were higher by 6.16 than those who did not go their checkups on time. As the pregnant women's pregnancy duration increased, their PBSES scores decreased by -.62. The scores of the pregnant women holding a bachelor's degree or above were higher by 5.47 than those who were high school graduates or below. The scores of the pregnant women aged 26 or older were higher by 3.49 than those aged 25 or younger. The scores of the pregnant women receiving breastfeeding training during the COVID-19 pandemic were higher by 3.34 than those who did not participate in such training.

Discussion

Main findings

In the study, the pregnant women were determined to have high breastfeeding self-efficacy levels (79.08±13.86). Pregnant women have been determined to have high,[16,17]moderate,[4,7,18] and low[19] levels of breastfeeding self-efficacy in various studies conducted before the pandemic. It is a satisfying result that their breastfeeding self-efficacy has been found to be high during the pandemic.

Strengths and limitations

Breastfeeding self-efficacy is a strong indicator of the duration of breastfeeding which can be affected by a set of factors in various situations including crises.[11] In the COVID-19 pandemic, which is indeed a crisis period, planning and implementing attempts during the prenatal period with information based on evidence

by identifying the factors affecting breastfeeding self-efficacy has become more important compared to other periods in terms of mothers' and babies' health. However, no studies have been seen which specify the factors affecting future mothers' prenatal breastfeeding self-efficacy levels and their breastfeeding self-efficacy during the pandemic. Conducted studies are generally completed during the postpartum period as the activity of breastfeeding takes place during this period. However, the breastfeeding self-efficacy of the mother should be developed during the prenatal period for breastfeeding to take place as soon as possible in the postpartum period and for successful breastfeeding results.

Interpretation

In the study, it was found that as the pregnant women's age increased, so did their breastfeeding self-efficacy. In studies done before the pandemic, it has been stated that there is a significant relationship between age and breastfeeding self-efficacy and as age increases, so do breastfeeding self-efficacy levels, similar to the results of this study.[13,17] As age increases, experiences and people's awareness soar up as well.

It was also determined in the study that as the mothers' educational background increased, so did their breastfeeding self-efficacy. In the studies carried out before the pandemic, it has been found that pregnant women holding a bachelor's degree or above had higher PBSES mean scores than those who were high school graduates or below, similar to the findings of this study[17,20] Sultana and Yasin (2021) state that educational background has a significant relation to breastfeeding practices awareness in the COVID-19 pandemic.[21] In her study, Dennis (2006) states that mothers with high educational backgrounds have higher breastfeeding self-efficacy levels than mothers with low educational backgrounds.[8] Contrary to the results of this study, Fauzia et al. (2020) express that educational background does not affect breastfeeding self-efficacy in their study, and explain the reason behind it to be the "employability of breastfeeding information", which is described by them as the idea that "if people with high educational background have not obtained any information on breastfeeding they may not know how to breastfeed, and if people with low educational background breastfeed frequently or are knowledgeable on breastfeeding they may have high breastfeeding self-efficacy".[22] It has been thought that people research about the pandemic and become knowledgeable on it more so as their educational background increases, and as such, decide to breastfeed their baby; therefore, their breastfeeding self-efficacy is developed and increased.

It was determined in the study that the pregnant women visiting their polyclinics for prenatal care checkups on time had higher PBSES mean scores than those who did not visit their polyclinics on time. Gonzales (2020) has found out that as the number of prenatal care checkups increase, so does the mother's breastfeeding self-efficacy.[12] While the majority of pregnant women in Turkey stated that they visited their doctors for prenatal care checkups before the pandemic,[33] pregnant women participating in studies carried out during the pandemic have stated not to visit their doctors for their checkups, postpone their checkups, or go to their checkups but not on time.[23,24-27] In these studies, the reason for not going to checkups, postponing checkups, or not going to checkups on time has been stated to be "anxiety/concern over going to prenatal care checkups."[27-29] Besides, implemented precautions such as curfews, limitation of social life, and social isolation practiced to be protected from the pandemic are thought to be effective on not going to prenatal care check-ups.

The pregnant women who thought breastfeeding to be beneficial for the baby were found to produce higher mean scores than those who did not. No pregnant woman participating in the study thought breastfeeding to be harmful to the baby. This result is thought to be important in that it specifies those who need to be supported for higher prenatal breastfeeding self-efficacy (indecisive ones).

It was found out that the pregnant women who received training on breastfeeding during the COVID-19 pandemic had higher PBSES mean scores than those who did not. Studies conducted before the pandemic show that breastfeeding training received during the prenatal period increases breastfeeding self-efficacy in the prenatal and postpartum periods.[31-32] In a systematic review and meta-analysis, it is suggested that breastfeeding training is an important factor to increase breastfeeding self-efficacy and should be received based on theory, individually or in groups at a hospital from the prenatal period up until the postpartum

first week.[32]

It was determined that pregnant women who were knowledgeable on COVID-19 had higher PBSES mean scores than those who were not. No study on this subject matter has been found in the literature. According to the data obtained from the COVID-19 related studies carried out so far and the opinions of WHO, there is no evidence that COVID-19 infection can be carried by breast milk. In this period in which COVID-19 has spread to many countries and become a pandemic, it is crucial for breastfeeding mothers to know the important points to look out for when breastfeeding their babies in order to protect the infant's health.

It was also found out in the study that as the gestational week increased, the PBSES scores decreased. Studies carried out before the pandemic claim that the gestational week does not affect PBSES scores[17] It is thought that as the relation was found to be weak and all the pregnant women were in their third trimester, a study with participants in different trimesters might be necessary.

According to the study, in the order of descending importance; being knowledgeable on COVID-19, thinking breastfeeding to be beneficial for the baby, going to prenatal care checkups on time, gestational week, educational background, age, and receiving breastfeeding training in the COVID-19 pandemic affect PBSES scores by 25% ($p<.05$). In one of the studies carried out before the pandemic, Hamid and Zaidi (2020) claimed that PBSES scores were affected by the variables of being a housewife, being multiparous, and having a positive attitude toward breastfeeding by 41%.[4] Corby et al. (2019) stated that the variables of feeling ready for giving birth, income status, concern, duration planned to be exclusively spared for breastfeeding, educational background, and marital status affected PBSES scores by 31.6% among primiparous women.[6] Khresheh and Ahmed (2018) expressed that there was no significant relationship between breastfeeding self-efficacy and sociodemographic variables.[16]

Conclusion

Mothers should start and continue breastfeeding by obeying health protocols during the Covid-19 pandemic. To that end, evaluating breastfeeding self-efficacy in the prenatal period, and planning and implementing effective interventions to encourage and support the mother have gained more importance in the pandemic. This study may contribute to the published evidence on the subject matter so that health professionals can convey suitable information and suggestions to pregnant women in the pandemic.

Authors' contributions: The conception and design of the study HA and KG, data collection KMG, data analysis HA, and interpretation HA and KMG drafting of the article interpretation HA, KMG and KG, critical revision of the article; HA, KMG and KG, All authors read and approved the final manuscript.

Details of ethics approval

Before the start of the study, permission was received from the Scientific Research Platform of the Ministry of Health of Turkey and from the Ethics Board of Necmettin Erbakan University (Number and date: 3018/2020).

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TABLES.docx available at https://authorea.com/users/737075/articles/712311-breastfeeding-self-efficacy-in-pregnant-women-and-factors-affecting-it-in-the-covid-19-pandemic-a-descriptive-and-correlational-study