

# The impact of the coronavirus disease 2019 outbreak on decision-making styles and breastfeeding of pregnant women: a cross-sectional study

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## SUMMARY

**OBJECTIVE:** This study was planned to examine the factors affecting the decision-making styles of pregnant women in the coronavirus disease 2019 epidemic, their choice of birth environment, and their decision to start breastfeeding.

**METHODS:** The study was conducted in a cross-sectional descriptive type. The study was conducted with 631 pregnant women who voluntarily participated between January 2020 and April 2021 and met the sample selection criteria. Women aged 18–45 years who had healthy singleton pregnancies were included. Pregnant women with signs or symptoms of coronavirus disease 2019 or suspected or diagnosed with birth were excluded from the study. The data were collected by the questionnaire method through the links shared with the pregnant women. Data Collection Form, Questionnaire for Birth and Breastfeeding in the coronavirus disease 2019 Period, and Melbourne Decision-Making Styles Scale-II were used as data collection tools.

**RESULTS:** The mean age of the pregnant women was found to be  $28.56 \pm 6.36$  years. Approximately 50.71% of the participants reported that they preferred normal vaginal delivery. It was reported that 56.1% of the pregnant women had a say in the decision-making process of the delivery method. It has been determined that there is a significant difference between the education status, employment status, pregnancy planning, family type, and the person who has a say in deciding the mode of delivery ( $p < 0.05$ ). The results of the analysis of worrying about starting breastfeeding according to the decision-making styles of the pregnant women in the sample group are examined. The difference between the scores of avoidant and procrastinating decision-making style, which is the sub-dimensions of the scale, and worrying about starting breastfeeding is statistically significant ( $p < 0.029$  and  $p < 0.029$ , respectively).

**CONCLUSION:** The research findings show that situations such as epidemics affect the decisions of pregnant women, and breastfeeding situations and decision-making styles affect each other. For this reason, education programs and guides including guidance services and support systems should be published and pregnant women should be guided correctly.

**KEYWORDS:** COVID-19. Pregnancy. Decision making. Breastfeeding.

## INTRODUCTION

It is observed that women, who are the most affected and abused side of epidemics, wars, and disasters, are greatly affected by coronavirus disease 2019 (COVID-19)<sup>1,2</sup>. There is limited information available for pregnant women about the COVID-19 outbreak and for now management is as for non-pregnant women<sup>3,4</sup>.

Although birth is a physiological event, deciding how to give birth is a great source of stress for women<sup>5,6</sup>. The characteristics of the individual and his social conditions are effective in the decision-making process<sup>7,8</sup>. As COVID-19 infection can cause serious complications such as death and the risk of transmission is high, pregnant women in special periods of

their lives are even affected by applying to health institutions for routine pregnancy check-ups, while their delivery preferences are highly affected<sup>9,10</sup>. It is of great importance that the delivery methods are explained to the pregnant by professional health workers and that the pregnant woman takes an active role in determining the birth environment or the health personnel who will help<sup>11</sup>. In addition, having a say in her own body and birth will increase the self-confidence of the pregnant, reduce the anxiety caused by the negative conditions created by the pandemic process, and prevent the pregnancy process from being negatively affected<sup>12,13</sup>. One of the important determinants of the decision-making process is the decision-making style<sup>14</sup>. In one study, three important areas in decision making

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are stated: the variability of the decision of the mode of delivery, the participation of the pregnant women in the decision, and the factors affecting the decision of the mode of delivery. Today, women want to have a say in the mode of delivery and to participate in the decision. It is thought that her own decision-making style is effective in the decision-making process of a woman who has to decide on the mode of delivery, especially for a reason that affects the decision-making process, such as the epidemic. At this stage, the duty of physicians and midwives is to ensure the appropriate participation of the pregnant woman in the birth decision and to encourage her to decide on the right mode of delivery. For this reason, this study was planned considering that there is a need for scientific studies examining the effect of the decision-making styles of expectant mothers on the decision of birth and breastfeeding in important risk factors such as epidemics. This study was planned to examine the factors affecting the decision-making styles of pregnant women in the COVID-19 epidemic, their choice of birth environment, and their decision to start breastfeeding.

## METHODS

### Study type and population

The study was planned as a descriptive cross-sectional type. The STROBE Statement was used in the planning, implementation, and reporting of the study design. The universe of the study consists of all pregnant women in Istanbul. The study sample consisted of 631 pregnant women who voluntarily participated and met the sample selection criteria. The study was conducted between January 2020 and April 2021. The ethics committee approval was obtained from the Non-Invasive Clinical Research Ethics Committee (Ethics Number: 198, Date: 24.12.2020) before starting data collection. Written informed consent was obtained from the pregnant women to voluntarily participate in the study. The study was conducted in accordance with the Declaration of Helsinki. The survey was anonymous, and pregnant women were able to quit the study at any time.

*Inclusion criteria:* The inclusion criteria were as follows: (a) volunteered to participate in the study, (b) residing in Istanbul, (c) speaking, reading, and writing Turkish, (d) aged between 18 and 45 years, (e) having a healthy singleton pregnancy, and (f) COVID pregnant women who did not pass 19.

*Exclusion criteria:* The exclusion criteria were as follows: (a) pregnant women outside of Istanbul, (b) pregnant women who did not want to participate in the study, (c) pregnant women with signs or symptoms of COVID-19 or suspected or diagnosed delivery, (d) pregnant women with any obstetric

indications and requiring hospitalization, (e) pregnant women with any existing/previously known psychiatric disorder, and (f) those who were not willing to participate in the research.

### Data collection tools

**Questionnaire Form:** It consists of a total of 35 questions, of which (a) 9 questions about the socio-demographic characteristics of women, (b) 18 questions about obstetric history, and (c) 8 questions about the problems and concerns caused by the coronavirus during pregnancy<sup>11,13</sup>.

**Melbourne Decision-Making Scale II:** The Turkish validity and reliability study of the scale was conducted by Deniz<sup>15,16</sup> Melbourne Decision-Making Scale II. The three-point Likert scale is “1=True, 2=Sometimes, and 3=Not True” and consists of 22 items and measures decision-making styles. There are four sub-dimensions in the scale that evaluate different decision-making styles, and the internal consistency coefficients of the scale sub-dimensions range from 0.65 to 0.80. Within the scope of this study, the internal consistency coefficients of the sub-dimensions of the scale ranged from 0.65 to 0.84. Within the scope of this study, the internal consistency coefficient for the whole scale was determined as 0.88.

### Data collection process and bias

After obtaining the necessary ethical approval for the research, the data collection tool prepared on the online platform was shared online by the researcher. Information about the study and the web link to the survey and the pandemic by the researchers were sent to all midwives and nurses working in their hospitals through email and/or text messages, and they were requested to share it with their pregnant women. Electronic data were collected through a secure method of Google surveys, and each survey took an average of 10–15 min to complete. In the first part of the form of the questionnaire link, an explanation was made about the purpose of the study, and their consent was obtained in the digital environment without asking for their identity information. In addition, there was a statement at the beginning of the survey in which the pregnant women confirmed in writing that they were willing to participate in the study. Participation of pregnant women was free, and they were informed that there was no benefit or harm. Participants were able to view the questions after their consent was obtained. Participants were informed in the statement that they had the right to leave the survey while answering the questions. At the beginning of the form, it was possible to move on to other questions according to the questions covering the inclusion and exclusion criteria. Those who did not cover these kits were excluded from the study because they could not see the other

questions. Pregnant women who completed all the questions were considered to have completed the questionnaire. The survey was accessible during the research period, and participants were able to access it on any device they wanted.

### Ethical approval

Before starting data collection, the ethics committee approval was obtained from the Non-Invasive Clinical Research Ethics Committee (Ethics Number: 198, Date: 24.12.2020). Written informed consent was obtained from the pregnant women to voluntarily participate in the study. The study was conducted in accordance with the Declaration of Helsinki. The survey was anonymous, and pregnant women were able to quit the study at any time.

### Statistical analysis

Statistical Package for Social Science (SPSS) version 21.0 for the Windows software (SPSS, Inc., Chicago, IL, USA) was used for all statistical analyses. The Kolmogorov-Smirnov test was used to evaluate the distribution of data before statistical analysis. Descriptive statistics were calculated, including frequency, percentage for nominal variables, and mean and standard deviation for continuous variables. The significance level was determined as  $p < 0.05$ .

## RESULTS

A total of 631 postpartum mothers (mean age  $28.56 \pm 6.36$  years; mean number of pregnancies  $2.17 \pm 1.72$ ; mean marriage years  $3.72 \pm 1.20$ ) were included in the study. It was reported that 41.7% of the participants had a second pregnancy and 76.9% did not have curettage/miscarriage. Approximately 50.71% of the participants reported that they preferred normal vaginal delivery. It was found that the differences between the educational status, employment, planned pregnancy, and income status of the pregnant women participating in the study and Melbourne Decision-Making Scale I–II (MDMS-I–II) were significant ( $p < 0.005$ ) (Table 1). It was found that there was no significant difference between birth preferences and those who are effective in birth preferences and MDMS-I–II ( $p > 0.005$ ).

The difference between the questions of delaying check-ups, paying attention to hygiene behaviors, and whether there is a difference between pregnancies of pregnant women during the COVID-19 period and the MDMS-I–II is significant ( $p < 0.05$ ) (Table 2).

In Table 3, when the results of the analysis of worrying about starting breastfeeding according to the decision-making

styles of the pregnant women in the sample group are examined. The difference between the scores of avoidant and procrastinating decision-making style, which is the sub-dimensions of the scale, and worrying about starting breastfeeding is statistically significant ( $p < 0.05$ ), and the difference between the scores of avoidant and procrastinating decision-making style, which is the sub-dimensions of the scale, and being worried about the choice of birth environment is statistically significant ( $p < 0.05$ ). When the results of the analysis between the birth environment preferences of the pregnant women constituting the sample group are examined, the difference between the sub-dimensions of the scale, avoidant, procrastinating, and panic decision-making style scores and the birth environment preferences is statistically significant ( $p < 0.05$ ).

## DISCUSSION

The research findings show that situations such as epidemics affect the decisions of pregnant women and breastfeeding situations and decision-making styles. The findings of the study show that there is a significant difference between the anxiety of starting breastfeeding and the birth environment preferences according to the decision-making styles of the pregnant women.

During the pandemic process, it is recommended that pregnant women avoid unnecessary travel, crowds, public transport, and contact with sick people, and more importantly, apply and maintain personal and social hygiene rules. It is recommended to reduce the frequency of follow-up of pregnant women and to continue follow-up by telephone or online, if possible<sup>12,16,17</sup>. According to the findings of this study, it was determined that there was a significant relationship between the total mean score of the Melbourne Decision-Making Scale and the fact that the pregnant women neglected their controls, paid attention to the use of masks, and felt different compared to their previous pregnancies. In a study, it was reported that, during the COVID-19 epidemic, approximately 57% of pregnant women were worried about being infected and 28.3% wanted to reduce the frequency of appointments<sup>18</sup>. It was observed that the research findings and the literature findings were in parallel. It is thought that these results are due to the belief of pregnant women that the risk of transmission will increase in the hospital environment.

Contrary to the onset, the World Health Organization (WHO) guidelines recommend encouraging mothers with suspected or confirmed COVID-19 infection to begin and continue breastfeeding because the benefits of breastfeeding significantly outweigh the potential risks of transmission. The findings of

**Table 1.** The effect of the sociodemographic variables on the MDMS-I-II scale (n=631).

Parameters	Mean±SD			
Age (years) X±SD (95%CI)	28.56±6.36 [27.03–28.92]			
Time of marriage (years) C±SD (95%CI)	3.72±1.20 [3.01–4.48]			
Number of pregnancies mean±SD (95%CI)	2.17±1.72 [2.29–2.48]			
	n	%	MDMS-I-II Mean±SD	p-value
Education	27	4.2	4.27±1.22	<b>0.000</b>
Primary school	128	20.2	5.01±1.30	
Secondary school	231	36.6	5.16±1.21	
High school	246	38.8	5.13±1.56	
University and above	27	4.2	4.27±1.22	
Working status				<b>0.000</b>
Yes	200	31.7	5.09±1.60	
No	431	68.3	4.98±1.23	
Income status				<b>0.000</b>
Miscarriage	323	51.2	5.08±1.12	
Middle	272	43.1	3.83±2.20	
High	76	5.7	3.83±2.51	
Family type				<b>0.000</b>
Nuclear family	535	84.8	5.09±1.60	
Extended family	96	15.2	4.98±1.23	
Planning pregnancy				<b>0.008</b>
Yes	379	60.1	4.48±2.12	
No	252	39.9	4.92±1.93	
Post-COVID-19 mode of delivery preference				0.276
Vaginal	320	50.7	4.74±2.16	
Cesarean	311	49.3	4.56±1.95	
Who was influential in the choice of birth				0.569
Doctor	354	56.1	2.65±2.01	
Midwife	71	11.3	5.24±2.03	
Myself	136	21.6	6.82±2.0	
My family and others	70	11.1	5.65±2.04	

MDMS-I-II, Melbourne Decision-Making Scale I-II. Bold indicates statistically significant p-values.

the study show that there is a significant difference in anxiety about starting breastfeeding according to the decision-making styles of pregnant women. The study findings are similar to the literature<sup>17</sup>. In order for the breastfeeding process to be positive for pregnant women, especially in the risky category such as the epidemic, appropriate guidance, counseling, and breastfeeding training are required for the mother.

When deciding whether to give birth in a hospital or at home, women consider factors such as safety and the psychological impact of the place they choose. One of the consequences of the epidemic is that women's views about birth environments have changed. In particular, it is thought that the risk of transmission of the epidemic is perceived as high by women in pandemic hospitals, and the thought that they and their baby

**Table 2.** The effect of the variables of the participants in the period of COVID-19 on the MDMS-I-II scale (n=631).

Parameters		n	%	MDMS-I-II Mean±SD	p-value
Disrupting their control	Yes	460	72.90	6.80±2.76	<b>0.000</b>
	No	171	27.09	5.62±2.69	
I didn't go out unless I had to	Yes	589	93.34	5.87±1.85	0.347
	No	42	6.65	5.69±1.78	
I consumed foods that would strengthen my immunity	Yes	515	81.61	5.89±2.79	0.573
	No	116	18.38	5.76±1.76	
I wore a mask and took care of hand hygiene	Yes	575	91.12	5.79±2.73	<b>0.002</b>
	No	56	8.87	5.49±2.96	
Have you considered ending your pregnancy due to COVID-19?	Yes	26	4.12	5.77±1.79	0.675
	No	605	95.87	6.79±1.88	
Is there a difference compared to your other pregnancies due to COVID-19?	Yes	459	72.74	5.80±2.76	<b>0.000</b>
	No	173	27.41	5.62±2.69	

MDMS-I-II, Melbourne Decision-Making Scale I-II. Bold indicates statistically significant p-values.

**Table 3.** Comparison of pregnant's breastfeeding and delivery preferences with MDMS-I-II and scale sub-dimensions (n=631).

Variables		Self-esteem* X±SS	Careful Decision Making* X±SS	Avoidant Decision Making X±SS	Procrastinating Decision Making* X±SS	Panic Decision Making* X±SS	MDMS I-II Total average X±SS
Worrying about starting breastfeeding	Yes	5.98±2.56	9.86±1.56	5.64±1.57	4.48±2.48	4.69±1.54	6.56±2.11
	No	6.68±2.12	8.87±2.34	4.32±2.42	3.51±1.32	3.50±2.32	6.79±2.24
p		0.121	0.174	<b>0.029</b>	<b>0.003</b>	0.119	<b>0.028</b>
Worrying about the choice of birth environment	Yes	6.41±2.42	10.86±1.34	5.04±1.37	4.20±1.48	5.10±1.47	6.96±2.31
	No	8.58±2.33	9.87±2.38	4.06±1.42	4.11±1.52	3.50±2.11	6.77±2.65
p		<b>0.032</b>	0.089	<b>0.039</b>	<b>0.002</b>	0.443	<b>0.000</b>
Birth environment preference	Home	6.79±2.95	8.87±1.36	3.06±1.39	4.22±1.49	3.12±1.49	6.21±2.23
	Hospital	6.68±2.56	9.78±1.31	5.90±2.39	6.03±1.54	5.90±2.41	5.98±2.45
p		<b>0.032</b>	0.061	<b>0.004</b>	<b>0.007</b>	<b>0.001</b>	<b>0.002</b>
Choice of obstetrician	Midwife	5.98±2.34	8.37±1.66	3.76±2.26	4.22±1.36	3.43±1.21	6.54±2.66
	Doktor	6.17±2.76	10.48±1.43	4.94±2.21	3.43±1.34	4.67±2.65	6.68±2.43
p		0.056	0.170	0.114	0.231	0.570	0.176

MDMS-I-II, Melbourne Decision-Making Scale I-II. Bold indicates statistically significant p-values.

will be harmed is quite high. According to the findings of this study, it was determined that there was a significant relationship between the decision-making styles of pregnant women during the COVID-19 period and their anxiety about their birth environment preferences. In a qualitative study, women planning to give birth at home emphasized the quality of their birth experience and believed in the natural process of childbirth. Women planning to give birth in a hospital believed that access to medical care outweighed their concerns about

the physical environment. This study showed that exposure to different situations affects our choices by influencing decision-making styles<sup>19</sup>.

Although many associations, organizations, or societies in the world support woman-centered birth, women have stated that they think that a physician should be the person who decides on the mode of delivery, the delivery environment, or who will assist the birth, as, in our country, the primary manager of childbirth and the person who mostly carries out

pregnancy follow-ups is a physician. It was reported that the decision of the physician was mostly effective in the birth preference decisions of the pregnant women in this study. In a study, pregnant women stated that they did not want to take an active role and responsibility in making the delivery decision<sup>17,18</sup>.

### Limitations and generalizability

In this study, only pregnant women who came to the controls in pandemic hospitals in 10 different provinces across Turkey were included.

The study results can only be generalized to the pregnant women who took part in this study.

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## CONCLUSION

The findings of the study found that there was a significant difference between the preferences of the birth environment, the choice of personnel to assist the delivery, the anxiety about starting breastfeeding, and the decision-making styles of the pregnant women during the COVID-19 epidemic. The impact of epidemics on pregnant women, especially in the risk group category, is quite high and affects their decision-making styles. Decision making can be adversely affected when the necessary counseling is not received. Therefore, psychological education programs including guidance services and support systems should be conducted and guidelines should be published to help pregnant women cope with stress factors and how they should behave in future epidemics.

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