

Original Article

Evaluating the Fear of Covid-19 and Prenatal Adaptation of Pregnant Women in the Pandemic Process

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Abstract

Background: Pregnant women, like every individual in the society, can be adversely affected in pandemic situations such as the Covid-19 pandemic.

Objective: This cross-sectional study was conducted to evaluate the fear of Covid-19 and prenatal adaptation in pregnant women during the pandemic.

Method: The study was completed with 400 pregnant women who applied to a training and research hospital between December 2021 and May 2022 and met the inclusion criteria. Data were collected using a "Personal Information Form", the "Fear of COVID-19 Scale", and the "Prenatal Self Evaluation Questionnaire (PSEQ)", through face-to-face interviews with pregnant women whose consent was obtained after the necessary information provided by the researcher. The data were analyzed using SPSS (Statistical Package for Social Sciences) for Windows 25.0 program and evaluated using descriptive statistical methods such as number, percentage, mean, standard deviation, minimum, maximum, median, Mann-Whitney U, Kruskal-Wallis, Bonferroni test and Spearman correlation analysis.

Results: The Fear of COVID-19 Scale and PSEQ mean scores of the pregnant women were 12.18 ± 4.41 and 141.79 ± 18.19 , respectively. There was a statistically significant positive weak correlation between their Fear of COVID-19 Scale and PSEQ mean scores ($r=0.184$, $p<0.05$), suggesting that the pregnant women with high fear of Covid-19 had low levels of prenatal adaptation.

Conclusion: It is very important to provide maternal and child health services by considering the pandemic effect for the continuation of healthy societies in the ongoing and future pandemic or epidemic situations.

Key words: Pregnancy, pandemic, fear of covid-19, prenatal adaptation

Introduction

The virus, identified in China at the end of 2019 by the World Health Organization (WHO), was reported to cause pneumonia and was named the novel coronavirus (World Health Organization (WHO, 2020a). Spreading rapidly, the coronavirus affected almost the entire world within a few months. Due to its high transmission potential and severity, and its spread to 113 countries outside China, where the outbreak initially occurred, the WHO declared it a "pandemic" on March 11, 2020 (Covid-19 General Information, Epidemiology, and Diagnosis Guide, 2020).

The effect of the Covid-19 virus on individuals varies depending on factors such as the presence of chronic diseases, the viral load acquired, and the person's age. Although the severity of the disease can vary based on these factors, it has been reported that individuals of all age groups are at risk. Vulnerable groups, including individuals with weakened immune systems, adults aged 65 and older, and pregnant women, may be more adversely affected by the virus compared to other healthy individuals (WHO, 2020b). The reasons for identifying pregnant women as a high-risk group include the potential negative outcomes that the Covid-19 virus could cause in the expectant mother or the baby during and

after pregnancy (Cabinet Office Guidance, 2022). Studies of pregnant women during the pandemic provide data on the dimensions of the risk (Dashraath et al., 2020; Poon et al., 2020; Zaigham & Andersson, 2020). One of these studies, a systematic review conducted by Zaigham and Andersson (2020) with 108 pregnant women, emphasized the potential association of Covid-19 with serious maternal morbidity during pregnancy and highlighted the importance of not neglecting the possibility of virus transmission from mother to baby (Zaigham & Andersson, 2020).

The Covid-19 pandemic has caused anxiety and fear throughout society, increasing the likelihood of mood disorders in pregnant women (Ahlers-Schmidt et al., 2020; Isik et al., 2020; Fan et al., 2021). Several factors such as fear of potential health problems and access issues to care during the pandemic, as well as restrictions during this period, have played effective roles in the occurrence of mood disorders in pregnant women (Lebel et al., 2020; Rashidi-Fakari & Simbar, 2020).

Pregnancy is a very special and sensitive period considering the physical and psychological changes that naturally occur. The successful completion of pregnancy with healthy delivery of the baby depends on the pregnant woman's ability to adapt to these changes during the prenatal period (Taskin, 2016). While there are many stressors in a pregnant woman's life that can affect prenatal adaptation, new stressors have been identified with the pandemic. Nurses play a key role in supporting pregnant women in coping with these stressors (Zheng et al., 2020). Nurses should be aware of the factors that are effective in the pregnancy process and provide professional care and counselling services to pregnant women in order to protect and improve the health of pregnant women and increase the success of prenatal adaptation (Daglar et al., 2019).

While there are studies on prenatal adaptation during non-pandemic periods in the literature (Polat-Baspinar, 2021; Karslioglu, 2019), there are limited studies specifically focusing on this issue during the pandemic (Ozkan & Cankaya, 2023; Unver, 2022; Aksu & Gulec-Satir, 2022). This study evaluates the prenatal adaptation of pregnant women during the pandemic and will contribute to the literature

by providing scientific data for planning nursing care services in future situations of different pandemics or infectious diseases.

Study Purpose: This study was conducted to evaluate the fear of Covid-19 and prenatal adaptation of pregnant women during the pandemic.

Methods

Type of the Study: This is a cross-sectional study.

Place and Time of the Study: The study was conducted with pregnant women admitted to a university training and research hospital between December 2021 and May 2022.

Population and Sample: The study was completed with 400 pregnant women who applied to a university training and research hospital between December 2021 and May 2022 and met the study inclusion criteria. The adequacy of the sample size was determined using the "G. Power-3.1.9.2" program with a confidence level of 95%, $\alpha = 0.05$ significance level. The calculated standardized effect size with a sample size of 400 was 0.184, and the power was determined to be 0.96. It was concluded that the sample size was sufficient for the study.

Inclusion criteria: The inclusion criteria were as follows: being admitted to the hospital where the study was conducted, being able to communicate in Turkish, being over 18 years of age, having no complications in pregnancy, being literate, not having any psychiatric diagnosis, not using any psychiatric medication, and agreeing to participate in the study.

Exclusion criteria: Having inability to communicate in Turkish and being under 18 years of age were determined as exclusion criteria. In addition, having incomplete data forms and withdrawing from the study were also accepted as exclusion criteria.

Data Collection Tools: The data were collected using a "Personal Information Form" to describe both individual and obstetric characteristics of pregnant women (age, gender, number of pregnancies, number of curettages, etc.), the "Fear of Covid-19 Scale" to evaluate the fear of Covid-19 in pregnant women, and the "Prenatal Self Evaluation Questionnaire (PSEQ)" to evaluate the adaptation of pregnant women to pregnancy and motherhood role.

Fear of Covid-19 Scale: The scale is used to assess the fear of Covid-19 and consists of 7 items in a single dimension. This Likert-type scale with a five-point scoring system was developed by Ahorsu et al. in 2020. The internal consistency and test-retest reliability of the scale ($\alpha = 0.82$ and $ICC = 0.72$) were acceptable (Ahorsu et al., 2022). The total score obtained from all items of the scale shows the level of fear of Covid-19 experienced by the individual. The scores on the scale ranges between 7 and 35, where a higher score indicates a greater fear of Covid-19. Satici et al. (2021) conducted the Turkish validity and reliability study of the scale and reported the internal consistency coefficient (Cronbach's α) as 0.84. In this study, the Cronbach's alpha value of the scale was found to be 0.886.

Prenatal Self Evaluation Questionnaire (PSEQ): The PSEQ was developed by Lederman in 1979, and its Turkish validity and reliability study was conducted by Tasci-Beydag and Mete in 2008. It measures adaptation to pregnancy and maternal role (Lederman, 1979; Tasci-Beydag & Mete, 2008). Tasci-Beydag and Mete (2008) found the internal consistency coefficient of the scale as 0.81 for the total scale and between 0.72 and 0.85 for the subscales. The scale consists of 79 items and 7 subscales: (1) concern for the well-being of self and baby, (2) acceptance of pregnancy, (3) identification of a motherhood role, (4) being ready to give birth, (5) fear of childbirth, (6) relationship with mother, and (7) relationship with husband (Tasci-Beydag & Mete, 2008). A total of 47 items (1, 2, 3, 4, 6, 7, 8, 10, 11, 12, 14, 15, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28, 31, 32, 33, 35, 37, 38, 40, 47, 48, 49, 50, 53, 55, 56, 59, 60, 61, 70, 71, 72, 73, 74, 75, 78, 79) are scored in reverse. This four-point Likert type scale, scoring between 1-4 (1 = not at all, to 4 = very much so). Reverse items are coded in the opposite way. The total score of the scale varies between 79-316. A higher scale score indicates lower adaptation during pregnancy (Lederman & Wels, 2009). In this study, the Cronbach's Alpha value of the PSEQ was found to be 0.889 and the smallest value found was 0.571 for the subscale of "acceptance of pregnancy".

Data Collection and Evaluation: After obtaining the necessary permissions for conducting the study, the researcher provided

verbal information about the purpose and scope of the study to the pregnant women who applied to the hospital where the study was conducted. After obtaining their written consent, the researcher collected the data with face-to-face technique by applying the data collection tools. The data were evaluated using descriptive statistical methods (number, percentage, mean, standard deviation, minimum maximum, and median), independent sample t test, Mann Whitney U test, analysis of variance, Kruskal Wallis test, Bonferroni test, and Spearman correlation analysis. The reliability of the scales was calculated using Cronbach's alpha value. A p value $p < 0.05$ was considered statistically significant.

Ethical Considerations: Before starting the study, an ethical approval was obtained from a university's non-interventional ethics committee for the feasibility of conducting the study (E-77192459-050.99-88155, Decision No:2021/752). Additionally, permission for the implementation of the study with pregnant women visiting the planned institution was obtained from the relevant institution. Furthermore, an approval for the implementation was obtained by applying to the Ministry of Health Scientific Research Platform. A permission was obtained via email from the authors who developed and adapted the Fear of Covid-19 Scale and the PSEQ for use in the study. Moreover, a written consent was obtained from the pregnant women who agreed to participate in the study.

Results

The mean age of the pregnant women was 28.32 ± 4.60 years, all of them were married, 46.5% were high school graduates, 95.5% had social security, 52.5% were housewives, 59.3% had income equal to expenses, and more than half of them lived with their husbands and children (Table 1).

In the study, 98.5% of the pregnant women did not have a diagnosis of chronic illness, 50.7% reported to have good health status, and 80.5% confirmed having a planned pregnancy. In addition, 87.3% of the pregnant women reported to feel happiness and joy when they heard that they were going to become mothers, and the majority of them felt ready to become mothers (Table 2).

Furthermore, 95% of the pregnant women did not receive any education about the pregnancy process, and those who received such education mostly received it from the hospital. Regarding emotional and social support during pregnancy, 33% received support from their husbands, while 49.7% received support from their own families (Table 2).

Considering the distribution of pregnant women according to the number of pregnancies, 39.3% were experiencing their first pregnancy, and 41.6% were on their second pregnancy. In terms of the number of childbirth, 68.2% had only one childbirth, and regarding abortions, 86.7% had experienced one abortions. Among those who had undergone curettage, 93.8% had undergone a single curettage (Table 3). According to Table 4, the pregnant women had a mean score of 12.18 ± 4.41 on the Fear of Covid-19 Scale and 141.79 ± 18.19 on the PSEQ. A

statistically significant positive weak correlation was found between the pregnant women's Fear of Covid-19 Scale and PSEQ total scores ($r=0.184, p<0.001$). A statistically significant positive weak correlation was also observed between their Fear of Covid-19 Scale and PSEQ subscale scores, including "concern for the well-being of self and baby" ($r=0.196, p<0.001$), "acceptance of pregnancy" ($r=0.155, p<0.05$), "being ready to give birth" ($r=0.253, p<0.001$), and "fear of childbirth" ($r=0.366, p<0.001$). In addition, a statistically significant negative weak correlation was found between their Fear of Covid-19 Scale and PSEQ subscales scores, including "identification of a motherhood role" ($r=-0.105, p<0.05$) and "relationship with husband" ($r=-0.123, p<0.05$). However, no statistically significant relationship was found between their Fear of Covid-19 Scale and PSEQ subscales of relationship with mother scores ($r=0.054, p>0.05$) (Table 5).

Table 1: Distribution of demographic characteristics of pregnant women (n=400)

		n	%
Marital status	Married	400	100.0
Education status	Primary-Secondary School	55	13.8
	High School	186	46.5
	University	159	39.7
Social security	Yes	382	95.5
	No	18	4.5
If yes*	Green Card	7	1.8
	Social Security Institution	364	95.3
	Special	9	2.4
	Asylum Seeker	2	0.5
Profession	Officer	47	11.8
	Worker	69	17.3
	Self-employment	74	18.4
	Housewife	210	52.5
Economic situation	Income less than expenditure	16	4.0
	Income equal to expenditure	237	59.3
	Income more than expenditure	147	36.7
Who she lives with	Husband	189	47.3

	Husband and children	208	52.0
	Grandparents	3	0.7

*Not all pregnant women responded.

Table 2. Characteristics of pregnant women regarding health status and pregnancy process (n=400)

		n	%
Diagnosis of chronic illness	Yes	6	1.5
	No	394	98.5
Assess their own health status	Good	203	50.7
	Middle	196	49.0
	Bad	1	0.3
Is the pregnancy planned?	Yes	322	80.5
	No	78	19.5
How did she feel when she found out she was going to be a mother?	Happiness, joy	349	87.3
	Sadness and negative emotions	5	1.3
	I didn't feel anything	37	9.1
	Other	9	2.3
Is she ready to be a mother?	Yes	364	91.0
	No	2	0.5
	Undecided	34	8.5
Receipt of education	Yes	20	5.0
	No	380	95.0
Place of education *	Hospital	19	95.0
	University	1	5.0
Time of education *	Previous pregnancy	9	45.0
	Last 2 years	9	45.0
	Last 3 years	2	10.0
Person providing the education *	Midwife	17	85.0
	Nurse	2	10.0
	Academician	1	5.0
The person in the family who provides moral and social support during pregnancy	Husband	132	33.0
	Her family	199	49.7
	Husband's family	25	6.3
	Friends and neighbours	16	4.0
	Other	28	7.0

*Only pregnant women who received pregnancy training responded.

Table 3. Descriptive information about fertility characteristics of pregnant women

			n	%
Fertility history	Number of pregnancies (n=400)	1	157	39.3
		2	166	41.6
		3	63	15.7
		4	9	2.2
		5	5	1.2
	Number of births (n=215)	1	146	68.2
		2	58	27.0
		3	8	3.5
		4	3	1.3
	Number of abortions (n=45)	1	39	86.7
		2	6	13.3
	Number of curettages (n=16)	1	15	93.8
		2	1	6.2

Table 4. Descriptive statistics of the Fear of Covid-19 Scale, PSEQ and sub-dimensions of PSEQ used in the study (n=400)

	N	Minimum	Median	Maximum	Mean	Standard Deviation
Fear of Covid-19 Scale	400	7.00	11.00	35.00	12.18	4.41
PSEQ Total Score	400	88.00	144.00	199.00	141.79	18.19
Concern for the well-being of self and baby	400	10.00	25.00	40.00	24.77	5.33
Acceptance of pregnancy	400	14.00	22.00	39.00	21.93	3.76
Identification of a motherhood role	400	15.00	26.00	38.00	25.90	3.79
Being ready to give birth	400	10.00	18.00	34.00	17.86	3.61
Fear of childbirth	400	10.00	20.00	33.00	19.62	4.20

Relationship with mother	400	10.00	14.00	34.00	14.66	3.94
Relationship with husband	400	10.00	17.00	31.00	17.06	3.77

PSEQ: Prenatal Self-Evaluation Questionnaire

Table 5. The relationship between the Fear of Covid-19 Scale, PSEQ and its sub-dimensions

	Fear of Covid-19 Scale		
	r	p	N
PSEQ Total Score	0.184	0.000**	400
Concern for the well-being of self and baby	0.196	0.000**	400
Acceptance of pregnancy	0.155	0.002*	400
Identification of a motherhood role	-0.105	0.036*	400
Being ready to give birth	0.253	0.000**	400
Fear of childbirth	0.366	0.000**	400
Relationship with mother	0.054	0.281	400
Relationship with husband	-0.123	0.014*	400

r: Spearman correlation analysis, *p<0,05,**p<0,001 PSEQ: Prenatal Self-Evaluation Questionnaire

Discussion

The Covid-19 pandemic has adversely affected society from physiological, psychological, and sociological perspectives (Torales et al., 2020). Particularly, during this period, pregnant women are likely to experience increased anxiety and fear (Ahlers-Schmidt et al., 2020; Isik et al., 2020; Fan et al., 2021). In this study, the pregnant women had lower Fear of Covid-19 Scale mean score (12.18 ± 4.41) than those in the study by Kaplan et al. (2022) (18.33 ± 7.15) (Kaplan et al., 2022). In a study conducted with 250 pregnant women in Iran in August 2020, the mean score of Fear of Covid-19 Scale was found to be 22.29 ± 7.08 (Naghizadeh & Mirghafourvand, 2021). Additionally, in another study conducted in Ethiopia in August 2020, the mean score of Fear of Covid-19 Scale was reported as 27.10 ± 5.20 (Dule, 2021). These differences in the results can vary depending on the

socioeconomic status, sociocultural characteristics, health system conditions of the countries where the studies were conducted, the time elapsed after the declaration of the pandemic, and the time of the study. In studies conducted immediately after the pandemic declaration, factors such as the novelty of the virus, its rapid transmission, and limited information about it might have played a prominent role in the participants' fear of Covid-19. As time progressed and efforts to develop vaccines and clarify protective measures advanced, these factors could have influenced the variability in the fear of Covid-19 experienced by pregnant women.

The PSEQ mean score of the pregnant women in this study is consistent with those reported by Unver (2022), Ozkan and Cankaya (2023), and Aksu and Gulec-Satir (2022). Unver (2022) reported a PSEQ mean score of 149.07 ± 25.35 in a study conducted with a

sample including approximately the same proportion of primigravida (41.1%). Similarly, Ozkan and Cankaya (2023) evaluated the pregnancy adaptation of pregnant women with and without threatened preterm labor in their study, reporting PSEQ mean score of 142.62 ± 22.14 for pregnant women with threatened preterm labor and 138.84 ± 22.53 for those without. Aksu and Gulec-Satir (2022) conducted a study on pregnant women with and without infertility treatment and reported the PSEQ mean scores as 139.10 ± 28.15 for those not receiving treatment and 135.90 ± 19.50 for those receiving treatment. The consistency in the PSEQ mean scores reported in these studies supports the results of the current study. It is noteworthy that the data in these studies were collected in different months of the years 2020-2021, and the data collection date in this study corresponds to the earlier months of the pandemic. The timing of data collection in studies conducted during the pandemic is considered crucial, as factors such as the novelty of the virus, its rapid transmission, and uncertainties regarding its impact and preventive measures might have been more prominent in the early stages of the pandemic. Nevertheless, the similarity in results among studies may not solely be attributed to the timing of data collection but could also be influenced by other factors, such as maternal age and experience. In contrast to these studies, Utkualp and Oner (2023) reported a higher PSEQ mean score of 259.16 ± 23.1 in their study evaluating pregnancy adaptation and health practices. This result indicates a lower level of adaptation compared to that in the current study. Utkualp and Oner (2023) collected data between June 2020 and January 2021. Considering that the first case in our country was reported in March 2020, uncertainties related to the course, severity, impact of the Covid-19 on pregnant women, and preventive measures against the disease have existed in the early months of the pandemic. Additionally, the healthcare follow-ups of pregnant women during this period might have been negatively affected due to the additional burden on healthcare services caused by the pandemic. The differences in results among studies can be attributed to these uncertainties and the potential impact on pregnant women during this sensitive period. While there are

similarities and differences in prenatal adaptation across studies, the occurrence of the pandemic introduces an additional factor that can influence these outcomes. The evaluation of any effective factor for the healthy progression of pregnancy is considered crucial during this highly sensitive period.

Considering the fear of Covid-19 and prenatal adaptation together, no similar study has been found in the literature that examines both the fear of Covid-19 and prenatal adaptation in pregnant women during the Covid-19 pandemic. However, studies focusing on prenatal adaptation in pregnant women during the pandemic can be found in the literature (Ozkan & Cankaya, 2023; Unver, 2022). In this study, a relationship was determined between the pregnant women's fear of Covid-19 and prenatal adaptation. Additionally, the pregnant women's concern for the well-being of self and baby, acceptance of pregnancy, being ready to give birth, and fear of childbirth were associated with their fear of Covid-19. This association indicates that the fear of Covid-19 brought by the pandemic could negatively affect pregnant women's adaptation processes during the prenatal period. The anxiety created by the pandemic, concerns for the well-being of self and baby, and the inability to experience the adaptation processes as they should, are possibly associated with the effect of Covid-19 on care processes. Furthermore, a negative relationship was identified between the pregnant women's fear of Covid-19, identification of a motherhood role and relationship with husband. This negative relationship may have developed in the influence of other contributing factors.

Limitations of the Study: The data of this study are limited to pregnant women who applied to the training and research hospital where the study was conducted, during the specified time period. Since there is only one training and research hospital in the provincial center where the study was conducted, the fact that the data were collected from a single center constitutes another limitation of the study.

Conclusion and Recommendations: In this study, the pregnant women's Fear of Covid-19 Scale and PSEQ mean scores were found

as 12.18 ± 4.41 and 141.79 ± 18.19 , respectively. Considering the PSEQ subscale scores, the pregnant women received the lowest and highest mean scores on the subscales of relationship with mother (14.66 ± 3.94) and identification of a motherhood role (25.90 ± 3.79), respectively. A statistically significant positive relationship was found between the pregnant women's Fear of Covid-19 Scale and PSEQ total scores, and between their scores on the Fear of Covid-19 Scale total and PSEQ subscales of concern for the well-being of self and baby, acceptance of pregnancy, being ready to give birth, and fear of childbirth. However, no significant relationship was found between their scores on the Fear of Covid-19 Scale total and PSEQ subscale of relationship with mother. Similarly, a statistically significant negative relationship was found between the pregnant women's scores on the Fear of Covid-19 Scale total and PSEQ subscales of identification of a motherhood role and relationship with husband.

Health events and pandemics can affect pregnant women. The procedures carried out in primary health care services become more important to increase the prenatal adaptation of the affected pregnant women and allow them to complete their pregnancy process in good health. When evaluating the prenatal adaptation of pregnant women and providing them with healthcare services, especially in such adverse processes, primary care nurses should take into account the results regarding negative impacts and adopt holistic approaches, which are crucial for maternal and child health services.

Furthermore, as experienced during the Covid-19 pandemic, the workload of primary health care centers may increase during pandemic processes. In such cases, it is recommended to generate alternative solutions to ensure that the routine operations of these centers are not disrupted, allowing them to continue healthcare services smoothly. Increasing awareness among healthcare professionals in this regard is also suggested.

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References

- Ahlers-Schmidt C, Hervey AM, Neil T, Kuhlmann S & Kuhlmann Z. (2020). Concerns of women regarding pregnancy and childbirth during the covid-19 pandemic. *Patient Education and Counseling*, 103(12): 2578-2782.
- Ahorsu, D. K., Lin, C. Y., Imani, V., Saffari, M., Griffiths, M. D. & Pakpour, A. H. (2022-online 2020). The fear of covid-19 scale: development and initial validation, *International Journal of Mental Health and Addiction*, 20 1537-1545.
- Aksu, H. & Gulec-Satir, D. (2022). Comparison of the adaptation to pregnancy in women who received infertility treatment and those who didn't. *Journal of Basic and Clinical Health Sciences*, 6, 260-267.
- Cabinet Office Guidance, Staying Alert and Safe (Social Distancing). (2022). *Coronavirus (Covid- 19) guidance and support*. <http://www.gov.uk/government/publications/staying-alert-and-safe-social-distancing> . Access date: 11.11.2021.
- Daglar, G., Ucar, T., Evceci, F. & Bilgic, D. (2015). Satisfaction level of pregnant women visited at the house in prenatal period. *Gumushane University Journal of Health Sciences*, 4(4), 535-546.
- Dashraath P, Wong JLJ, Lim MXK, Lim LM, Li S, Biswas A, Choolani M, Mattar C & Su LL. (2020). Coronavirus disease 2019 (Covid-19) pandemic and pregnancy. *American Journal of Obstetrics and Gynecology*, 222(6):521-531.
- Dule A. (2021). Psychological distress among Ethiopian pregnant women during covid-19: negative correlation with self-efficacy, *Psychology Research and Behavior Management*, 14, 1001-1010.
- Fan S, Guan J, Cao L, Wang M, Zhao H, Chen L & Yan L. (2021). Psychological effects caused by covid-19 pandemic on pregnant women: a systematic review with meta-analysis. *Asian Journal of Psychiatry*. 56.
- Isik, G., Yesilcinar, İ., Cetin Avci, S., Topaloglu, E., Evrenol Ocal, S. & Egelioglu Cetisli, N. (2020). Antenatal, intrapartum and postpartum management of covid-19 infection. *Izmir Katip Celebi University Faculty of Health Science Journal*, 5 (2): 93-98.
- Karslioglu, U. (2019). The Relation with Adaptation to Pregnancy and Maternal-Fetal Attachment of The Domestic Violence Against Women. Master's Thesis. Inonu University Health Sciences Institute.
- Kaplan, O., Kaplan A., Cagli, F. & Cetin, S. (2022). The relationship between the covid-19 fears levels of pregnant women and the preventive, traditional and complementary medicine practices used. *Inonu University*

- Journal of Vocational School of Health Service*, 10(2), 590-602.
- Lebel C, MacKinnon A, Bagshawe M, Tomfohr-Madsen L & Giesbrecht G. (2020). Elevated Depression and Anxiety Among Pregnant Individuals During the Covid-19 Pandemic. *Journal of Affective Disorders*, 277:5-13.
- Lederman RP, Lederman E, Work BA Jr & McCann DS. (1979). Relationship of psychological factors in pregnancy to progress in labor. *Nursing Research* 28 (4): 94-97. PMID: 254068
- Lederman, R. & Weis, K. (2009). In *Psychosocial Adaptation To Pregnancy.: Assessment of Seven Dimensions of Maternal Development*. New York: Springer, 1-56.
- Naghizadeh S & Mirghafourvand M. (2021). Relationship of fear of covid-19 and pregnancy-related quality of life during the covid-19 pandemic, *Archives Of Psychiatric Nursing*, 35(4), 364-368.
- Ozkan, T. & Cankaya, S. (2023). Pregnancy adaptation and prenatal attachment levels of pregnant women at threat of pre-term birth and those not at threat of pre-term birth. *Journal of Selcuk Health*, 4(2), 256-274.
- Polat-Baspinar D. (2021). Assessment Of Pregnancy, Psychological Stability and The Factors Affecting Them of the Pregnant Women's Consulted Women Diseases and Maternity Clinic of Pamukkale University. Master Thesis. *Pamukkale University Health Sciences Institute*.
- Poon LC, Yang H, Kapur A, Melamed N, Dao B & Divakar H. (2020). Global interim guidance on coronavirus disease 2019 (covid-19) during pregnancy and puerperium from figo and allied partners: information for healthcare professionals, *Int J Gynaecol Obstet*;149(3):273-86.
- Rashidi Fakari FR & Simbar M. (2020). Coronavirus pandemic and worries during pregnancy; a letter to editor. *Arch Acad Emerg Med*.8(1): 21.
- Satici B, Gocet-Tekin E, Deniz ME & Satici SA. (2021). Adaptation of the fear of cov-19 scale: its association with psychological distress and life satisfaction in Turkey. *International Journal of Mental Health and Addiction*, 19(6):1980-1988.
- Tasci-Beydag, M. & Mete S. (2008). Validity and reliability study of the prenatal self evaluation questionnaire. *Journal of Anatolia Nursing and Health Sciences*, 11(1), 16-24.
- Taskin L. *Obstetrics and Woman Health Nursing*.13. Edition. Ankara Özyurt Publishing, 14-15, 2016.
- T.C Ministry of Health, General Directorate of Public Health Covid-19 (SARS-CoV-2 infection) General Information, Epidemiology and Diagnosis Guide, Ankara, (2020). <https://covid19.saglik.gov.tr/TR-66337/genel-bilgiler-epidemiyojii-ve-tani.html> Access date: 12.11.2021.
- Torales J, O'Higgins M, Castaldelli-Maia JM & Ventriglio A. (2020). The outbreak of covid-19 coronavirus and its impact on global mental health, *International Journal of Social Psychiatry*, 66(4): 317-320.
- Utkualp N., Oner S. (2023). Determination of women's adaptation to the pregnancy process and levels of health practices, *International Journal of Caring Sciences*, 16(2): 948-955.
- Unver S. (2022). Patient Activation and Health Literacy in Pregnancy and its Relationship with Pregnancy Adaptation. Master's Thesis, Hitit University Graduate Education Institute.
- World Health Organization (WHO) (2020a). Coronavirus Disease 2019 (Covid-19) Situation Report – 61, Status Report, https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200321-sitrep-61-covid-19.pdf?sfvrsn=f201f85c_2. Access date:11.11.2021.
- World Health Organization (WHO) (2020b) Q&A On Covid-19 and Related Health Topics (Coronavirüs disease (Covid-19)). <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/coronavirus-disease-covid-19> Access date:11.11.2021.
- Zaigham M & Andersson O. (2020). Maternal and perinatal outcomes with covid-19: a systematic review of 108 pregnancies. *Acta Obstetrica et Gynecologica Scandinavica.*, 99(7):823-829. <https://doi.org/10.1111/aogs.13867>
- Zheng, Q., Jiang, X., Lin, Y., Liu, G., Lin, Y., Kang, Y, ...& Liu, X. (2020). The influence of psychological response and security sense on pregnancy stress during the outbreak of coronavirus disease 2019: A mediating model. *Journal of Clinical Nursing*, 29(21-22), 4248–4257. <https://doi.org/10.1111/jocn.15460>