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The effect of coronavirus disease perception on somatic sensations and cognitive emotion regulation in pregnant women

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Abstract

The objective of this study was to evaluate the effect of coronavirus disease perception on somatic sensations and cognitive emotion regulation in pregnant women. The study is a descriptive cross-sectional study. The sample consisted of 144 pregnant women. In the study, the Cognitive Emotion Regulation Scale (CERS) short form, Coronavirus disease perception scale (CVDPS), Coronavirus anxiety scale (CVAS), and Exaggeration of Somatic Sensations Scale (ESSS) were used. In CERS, high scores of "Catastrophizing", "Blaming Others" sub-dimension are the significant variables that predict the scores of Coronavirus Anxiety Scale. Significant variables that predict scores of ESSS within the order of their importance are having high scores for "Rumination", low scores for the presence of smoking and "Positive R-Refocusing" that are the sub-dimensions of CERS. Pregnant women use cognitive distortions such as catastrophizing and blaming others to generate coronavirus anxiety, predictors of exaggerating bodily sensations are increased ruminations and decreased positive refocusing. *(Afr J Reprod Health 2024; 28 [11]: 68-77).*

Keywords: Coronavirus, cognitive emotion regulation strategies, somatic sensation, pregnant

Résumé

L'objectif de cette étude était d'évaluer l'effet de la perception de la maladie à coronavirus sur les sensations somatiques et la régulation cognitive des émotions chez les femmes enceintes. L'étude est une étude transversale descriptive. L'échantillon était composé de 144 femmes enceintes. Dans l'étude, la forme abrégée de l'échelle de régulation des émotions cognitives (CERS), l'échelle de perception de la maladie à coronavirus (CVDPS), l'échelle d'anxiété du coronavirus (CVAS) et l'échelle d'exagération des sensations somatiques (ESSS) ont été utilisées. Dans le CERS, les scores élevés de la sous-dimension « Catastrophisme » et « Blâmer les autres » sont les variables significatives qui prédisent les scores de l'échelle d'anxiété du coronavirus. Les variables significatives qui prédisent les scores de l'ESSS dans l'ordre de leur importance sont les scores élevés pour la « rumination », les scores faibles pour la présence de tabagisme et le « recentrage R positif » qui sont les sous-dimensions du CERS. Les femmes enceintes utilisent des distorsions cognitives telles que catastrophiser et blâmer les autres pour générer une anxiété liée au coronavirus, les prédicteurs de sensations corporelles exagérées sont une augmentation des ruminations et une diminution du recentrage positif. *(Afr J Reprod Health 2024; 28 [11]: 68-77).*

Mots-clés: Coronavirus, stratégies de régulation cognitive des émotions, sensation somatique, grossesse

Introduction

Pregnancy is a natural and physiological period in a woman's life. However, pregnancy is also a period when many risks may be faced[1,2]. Being diagnosed with a disease during pregnancy or the possibility of being diagnosed with a disease scares the pregnant woman and her family and causes them to experience anxiety[3]. The Coronavirus (COVID-19) epidemic, which affects the cognitive emotion regulation of individuals and can cause somatic symptoms to appear at the end of the process, is a new respiratory disease that has spread widely around the world[4-6]. The negative effects of the COVID-19 pandemic on the mental health of society are effective in all individuals, but pregnant women who experience a higher probability of getting sick are more negatively affected by the process[4,7]. It has been found that pregnant women are more likely to be affected by the virus mentally

and physically in previous outbreaks in the world (SARS and MERS), and the perception of coronavirus disease is stressful and alarming for all pregnant women in different parts of the world [8-12].

Although various diseases infect people during each period of their lives, the reactions to the disease are experienced differently in each person. Individuals behave according to the representation of diseases in their minds[13,14]. Patients try to explain their illness as a result of their individual experiences, values, beliefs, knowledge, and requirements, that is, the perception of the disease that is essentially the cognitive view of the disease[15,16]. Individuals who think they are sick create cognitive models regarding the symptoms of the disease and develop their coping mechanisms with these models[15,16]. Accordingly, people create schemes for diseases and life-threatening situations in their minds in the light of the information presented to them from concrete and abstract sources[17]. Cognitive emotion regulation is overcoming stressful events and emotions through cognitive processes. The regulation of emotion through thoughts helps manage emotions in the face of a stressful situation and ensures the continuation of a person's well-being[18,]. In cognitive change, an individual can change the importance of the situation from an emotional point of view by re-evaluating his condition[18,20-22]. Perception, or cognitive processes, is a dynamic process that helps recover by directly affecting the individual's emotional response to the disease and his adaptation to treatment[23]. Emotions are one of the possible links between cognition and the body, and an individual's anxiety condition triggers exaggeration of somatic sensations. In a study conducted, it was found that pregnant women were undergoing inpatient treatment experience more anxiety and stress than pregnant women who are not hospitalized[3]. Studies have also shown that somatic sensations are associated with general distress, including anxiety and depressive symptoms[5,18].

For many people, the epidemic is perceived as threatening their health and damaging the environment of trust in their lives[13,14]. This situation affects their behavior by causing them to experience anxiety and fear. When all pregnant and non-pregnant individuals are diagnosed with any disease, they usually develop various beliefs about their condition, and these beliefs form the key points of behavior for the management of the disease[23,24]. The studies conducted to determine the effects of the pandemic, including pregnant women, focused more on physical health. However, we have insufficient data about the complications that may be faced by pregnant women who are in the risk group and psychosocial complications of the pandemic and which kind of changes occur in the perceptions and attitudes of pregnant women[6,7,19,25].

We believe that the results of this study will contribute to the literature in determining the cognitive-emotional regulation and bodily sensations of pregnant women in the risk group during an epidemic such as the COVID-19 pandemic, and we hope that it will be useful in responding to these cases. In addition, the findings of our study can guide psychosocial support programs to be developed for pregnant women outside of pandemic periods. Health professionals can design more effective interventions to reduce anxiety and support mental health in such high-risk situations.

Methods

This research is a descriptive type of study. The research population consisted of pregnant women who were patients of a private (Diva) women's health center. The study was conducted between August 1st and November 1st, 2020. In the study, we did not focus on the no of samples but included pregnant women who voluntarily accepted to participate in the study and met the inclusion criteria in the scope of the research. 144 pregnant women who agreed to participate in the study constituted the sample of the study. The researchers collected the research data using the questionnaire prepared due to the literature review and face-to-face interview method. The data of the study were collected using the “Personal Information Form," "Coronavirus Disease Perception Scale," "Exaggeration of Somatic Sensations Scale," "Cognitive Emotion Regulation Scale Short Form" and "Coronavirus Anxiety Scale."

Measures

Personal Information Form: It was prepared by researchers based on the literature[26,27,28]. In the

form, 16 questions were asked to pregnant women regarding their sociodemographic characteristics and information related to their disease.

Cognitive Emotion Regulation Scale Short Form (CERSS): It is a 36-item scale developed by Garnefski, Kraaij and Spinhoven[12]. A Turkish validity and reliability study was conducted by Çakmak and Çevik[29]. Cronbach alpha reliability was found between 0.63 and 0.74, and as a result of factor validity analyses, it was found that it is a valid scale. The scale, consisting of 18 items, is a 5-point Likert-type self-report scale scored as 1 (never), 2 (sometimes), 3 (usually), 4 (mostly), and 5 (always). There are 9 subscales, each of which has 2 items, and assessment thereof is made with subscale scores. High scores indicate that this strategy is used more often. These are as follows: self-blaming, rumination, catastrophizing, blaming others, acceptance, positive refocusing, refocusing on making plans, positive reassessment, and mitigating the value of the event.

Coronavirus Disease Perception Scale (CVDPS): The Coronavirus Disease perception scale is an adaptation of a scale developed by Çırakoğlu during the swine flu epidemic[24]. The scale, which consists of eight items in a five-point Likert structure, was adapted[30]. The first component, called dangerousness, covers perceptions and beliefs about the danger posed by COVID-19 disease. The second component, called infectiousness, consists of items related to the disease's infectiousness perceptions. The high scores obtained from these dimensions indicate that the associated perception is high.

Coronavirus Anxiety Scale (CVAS): It is a 5-point Likert-type scale consisting of 5 items developed[31]. Each item reflects the frequency of symptoms experienced two weeks before, ranging from 0 (not at all) to 4 (almost every day). Four dimensions are Cognitive (e.g., recurrent thoughts, anxiety, prejudice, imagining, planning), behavioral (e.g., dysfunctional activities, avoidance, compulsive behaviors), emotional (e.g., fear, anxiety, anger), and physiological (e.g., sleep disturbances, somatic distress, tonic immobility) dimensions.

The cutoff score is 9. It is a reliable and valid measurement tool that distinguishes well between those with and without dysfunctional anxiety. The Turkish validity and reliability study of the scale was conducted by Akkuzu *et al*.[32]

The Scale of Exaggeration of Somatic Sensations (ESSS): It was developed in order to explain somatization[20]. In 2007, the Turkish reliability study was conducted[33]. It is a scale that studies the exaggeration of the normal somatic sensations of an individual. It is a self-assessment scale consisting of 10 items in Likert type structure, and scored between 1-5, in which people are evaluated with the expressions "completely fits me" and "decisively doesn't fit me." The total score is considered to be the magnification/exaggeration score.

Data analysis

The data of the study were analyzed using the SPSS 23.0 version. Descriptive statistics were expressed as frequency, percentage, mean and standard deviation. Since the skewness and kurtosis values of the numerical variables vary between ±1.5, it was assumed that the data indicated a normal distribution[34]. The total scores of the Coronavirus Anxiety Scale and the Cognitive Emotion Regulation Scale were evaluated as dependent variables in multiple linear regression analysis. While the Durbin Watson value was 0.331 in the regression analysis in the model in which the determinants of the total score of the Coronavirus Anxiety Scale were investigated, the Durbin Watson value was found to be 1.843 in the model in which the determinants of the total score of the Cognitive Emotion Regulation Scale were investigated. The Status Index values in both models were 8.367 and 14.269, respectively. These values indicate no autocorrelation and multicollinearity problems in the created models.

The stepwise method was used to avoid multicollinearity connection problems in these analyses. Internal reliability coefficients (Cronbach's alpha) were used for the reliability analysis of the scale. The statistical significance level was accepted as $p<0.05$.

Ethical considerations

The study was approval by the University Ethics Committee, as well as of the Ethics Committees from the different assistance resources (dated

09.07.2020, with no 20-KAEK-205), and it was conducted in accordance with the Declaration of Helsinki and with the data protection laws regarding regulation (EU) 2016/679 of the European Parliament and of the Council, of April 27, 2016. Informed consent was obtained from the pregnant women who participated in the study and institutional permission was obtained from Diva Women's Health Center on 20.06.2020.

Results

The sociodemographic, psychiatric, and pregnancy-related characteristics of the participants participating in the study are shown in Table 1. The average age of pregnant women was calculated as 29.63±4.32. While 73.6% of pregnant women had university and advanced education levels, 72.9% live as a nuclear family. While 31 pregnant women were smokers, 24 pregnant women were taking alcohol. 10.4% (n=15) of pregnant women stated that their pregnancies were not voluntary, 21.5% (n=31) had a miscarriage, and 16.7% (n=24) had an abortion at least once.

Table 2 shows the evaluation of the Coronavirus Anxiety Scale, COVID-19 Disease Perception Scale, and Somatic Sensation Exaggeration Scale according to sociodemographic, psychiatric, and pregnancy-related variables in Table 2. The Contagiousness sub-dimension scores of the COVID-19 Perception Scale were significantly higher in pregnant women with an educational level of university and above (t=-2.521, p=0.013). Similarly, the perception of contagiousness in those with the nuclear family type is significantly higher than those with the extended family type (t=2,774, p=0,006). The scores of the Coronavirus Anxiety Scale in pregnant women who drink alcohol are less than those who do not drink alcohol (Z=-2.688, p=0.007). Those who drink alcohol are compared to those who do not drink alcohol, and those who are smokers compared to non-smokers scored significantly higher on the scale of exaggerating their somatic sensations (p=0.003, p<0.001, respectively).

The evaluation of the total scores of the Coronavirus Anxiety Scale and the Exaggeration of Somatic Sensations Scale by regression analysis is shown in Table 3. Sub-dimensions of COVID 19 Perception Scale (Dangerousness and Contagiousness) and sub-dimensions of the Cognitive Emotion Regulation Scale were included in the models created to identify the predictors of scales.

The model in which the determinants of the total score of the Coronavirus Anxiety Scale were investigated is significant (F=10,186, p<0,001) and explains 17% of the variance. The Cognitive Emotion Regulation Scale (CERS) is the model in which the determinants of the total score were investigated (F=33,039, p<0.001) and describes 46% of the variance. In CERS, high scores of “Catastrophizing” sub-dimension (β=0,314, p=0.049), "Rumination" sub-dimension (β=-0,392, p=0,022) and “Blaming Others” sub-dimension (β=0,353, p=0,023) are the significant variables that predict the total scores of Coronavirus Anxiety Scale. The significant predictor variables that predict the total scores of Exaggeration of Somatic Sensations Scale within the order of their importance have high scores in "Rumination" sub-dimension of CERS (β=0,353, p<0,001), low scores in “Positive refocusing” sub-dimension of CERS (β=-0,230, p=0,005) and low scores in “Catastrophizing” sub-dimension of CERS (β=-0,175, p=0,049)

Discussion

This study was conducted on pregnant women and aimed to evaluate the effect of coronavirus disease perception on somatic sensations and cognitive emotion regulation. The results of the research indicate that the total score of the coronavirus anxiety scale significantly predicts the Catastrophization and Blaming others strategies. When the literature is examined, the Catastrophization strategy is usually associated with anxiety, and rumination is associated with depression[35]. In a study conducted on pregnant women, an increase in the usage of Catastrophization and Blaming others strategies increased anxiety, depression, negative self, somatization, and hostility[36]. These dysfunctional strategies reflect the maladaptive cognitive coping methods that pregnant women frequently use to cope with COVID-19-related stress. It is also supported in the literature that these strategies worsen anxiety by increasing emotional distress.

Table 1: Descriptive and some clinical characteristics of the sample

Variables		**n**	**%**
Age	≤ 30	78	54,2
	≥ 31	66	45,8
Education	High school and below	38	26,4
	University and above	106	73,6
Family type	Nuclear	105	72,9
	Wide	39	27,1
Kin marriage	Yes	29	20,1
	No	115	79,9
Chronic Disease	Yes	12	8,3
	No	132	91,7
Psychiatric Disorder	Yes	9	6,3
	No	135	93,8
Psychiatric Disorder in	Yes	16	11,1
Family	No	128	88,9
Drinking Alcohol	Yes	24	16,7
	No	120	83,3
Smoker	No	113	78,5
	Yes	31	21,5
Number of Pregnancies	1	60	41,7
	2	60	41,7
	3 and above	24	16,7
Voluntative Pregnancy	Voluntary	129	89,6
	Involuntary	15	10,4
Experiencing miscarriage	Yes	31	21,5
	No	113	78,5
Experiencing an abortion	Yes	24	16,7
	No	120	83,3

Table 2: Evaluation of Scales for Exaggerating Coronavirus Anxiety, COVID-19 Disease Perception, and Somatic Sensations according to sociodemographic and descriptive characteristics

Variables		Coronavirus Anxiety Scale	COVID-19 Perception Scale		Exaggeration of Somatic Sensations Scale
			The sub-dimension of dangerousness	The lower dimension of contagiousness	
Age	30 and below	8,91±3,74	4,16±1,01	4,00±1,12	29,11±10,05
	31 and over	9,01±3,87	4,21±0,84	3,92±1,01	29,71±9,70
	t	-0,165	-0,348	0,456	-0,360
	p	0,869	0,728	0,649	0,719
Education level	High school and below	8,84±4,00	4,01±1,05	3,59±1,22	29,63±9,59
	University and above	9,00±3,73	4,24±0,88	4,10±0,98	29,30±10,00
	t	-0,220	-1,306	-2,521	0,176
	p	0,827	0,194	0,013	0,860
Family type	Nuclear	8,81±3,62	4,22±0,94	4,11±1,04	29,25±10,37
	Wide	9,33±4,22	4,08±0,91	3,57±1,07	29,74±8,47
	t	-0,722	0,795	2,774	-0,262
	p	0,471	0,428	0,006	0,794
Kin marriage	No	8 (6-11)	4,33 (3,66-5)	4,5 (3,25-4,75)	28 (19-39)

	Yes	7 (5-12,5)	4,67 (4,33-5)	4,25 (3,37-4,5)	29 (22-36)
	Z	-0,504	-1,230	-0,835	-0,451
	p	0,615	0,219	0,404	0,652
Chronic	No	8 (5-12)	4,33 (3,66-5)	4,5 (3,25-4,75)	29 (20-39)
Disease status	Yes	8 (5,25-10)	4,16 (3,41-5)	4,5 (2,87-4,93)	30(19,5-42,25)
	Z	-0,720	-0,622	-0,113	-0,391
	p	0,472	0,534	0,910	0,696
Psychiatric	No	8 (5-11)	4,33 (3,67-5)	4,5 (3,31-4,75)	29 (19,25-39)
Disorder in	Yes	11,5(6,25-13,75)	4,5 (3,75-4,67)	4,25 (2,81-4,68)	29 (22,5-35)
Family	Z	-1,941	-0,324	-0,805	-0,029
	p	0,052	0,746	0,421	0,977
	No	8 (6-12)	4,67 (3,67-5)	4,5 (3,25-4,75)	28 (19-38)
Psychiatric	Yes	6 (5-12)	4 (3,33-4,67)	4,5 (2,75-4,5)	37 (29,5-41)
Disorder	Z	-0,922	-1,208	-0,840	-1,809
	p	0,357	0,227	0,401	0,070
Drinking	No	9 (6-12)	4,67 (3,67-5)	4,5 (3,5-4,75)	28 (19-37,25)
Alcohol	Yes	5,5 (5-8,75)	4,16 (3,41-4,66)	3,75 (2,75-4,68)	36,5(30-41,25)
	Z	-2,688	-1,663	-1,387	-2,962
	p	0,007	0,096	0,165	0,003
Smoker	No	8,98±3,46	4,24±0,92	4,02±1,07	27,62±9,73
	Yes	8,87±4,86	3,96±0,97	3,75±1,05	35,80±7,51
	t	0,144	1,479	1,283	-4,334
	p	0,885	0,141	0,202	<0,001
Number of	1	8 (5,25-11,75)	4,33 (3,67-5)	4,5 (3,56-5)	30 (21-38,75)
Pregnancies	2	8 (5,25-11)	4,33 (3,67-5)	4,5 (3-4,75)	27 (19-38,5)
	3 and above	8,5 (5-13)	4,67 (3,67-5)	4,25(3,12-4,68)	30(20,5-39,75)
	X^2	0,053	0,937	2,421	1,516
	p	0,974	0,626	0,298	0,469
Voluntative	Voluntary	10 (5-15)	4,33 (3,33-5)	4,5 (3-5)	29 (28-39)
Pregnancy	Involuntary	8 (5-11)	4,33 (3,67-5)	4,5 (3,37-4,75)	28 (19-39)
	Z	-1,134	-1,129	-0,238	-0,979
	p	0,257	0,259	0,812	0,328
Experiencing	No	8,81±3,63	4,11±0,99	3,95±1,09	29,05±9,44
miscarriage	Yes	9,48±4,33	4,44±0,64	4,01±1,02	30,61±11,36
	t	-0,870	-1,710	-0,276	-0,778
	p	0,386	0,089	0,783	0,438
Experiencing	No	8,5 (6-11)	4,33 (3,67-5)	4,5 (3,31-4,75)	29 (19-38)
an abortion	Yes	6 (5-13,75)	4,5 (3,75-5)	4,5 (2,56-4,75)	29,5(26-39,75)
	Z	-0,244	-0,141	-0,233	-1,258
	p	0,807	0,888	0,815	0,208

While the strategies of Catastrophization and Blaming others were significantly associated with anxiety symptoms[37], it has been determined that the Catastrophization strategy has a significant effect on describing anxiety in particular[38]. When we review the predictive power on predicting the Coronovirus Anxiety in Cognitive Emotion Regulation in Pregnant Women, it was found that the strategies of 'catastrophizing' and 'blaming others' had a significant effect. The use of Catastrophization and Rumination strategies increases the level of anxiety and stress[39]. This finding suggests that these strategies play a critical role in how pregnant women perceive and respond to COVID-19-related stressors. Such maladaptive strategies increase anxiety levels, especially in situations perceived as threatening. The use of dysfunctional strategies is compatible with the literature because it may affect the increase in anxiety levels. At the same time, our study's total score of the coronavirus anxiety scale significantly predicts psychiatric illness.

Table 3: Evaluation of the total scores of the Coronavirus Anxiety Scale and the Exaggeration of Somatic Sensations Scale by regression analysis

Predicted Variables	Predictive Variables	Unstandardized Coefficients		Standardized Coefficients	t	p
		B	Std. Error	Beta(β)		
Coronavirus Anxiety Scale	CERS- Catastrophization	0,314	0,159	0,194	1,968	0,049
	CERS- Rumination	-0,392	0,169	-0,228	-2,320	0,022
	CERS- Blaming others	0,353	0,153	0,177	2,301	0,023
The Scale of Exaggeration of Bodily Sensations	CERS- Rumination	1,581	0,386	0,353	4,092	<0,001
	CERS- Positive refocusing	-1,131	0,399	-0,230	-2,837	0,005
	CERS- Catastrophization	-0,736	0,370	-0,175	-1,989	0,049

CERS: Cognitive Emotion Regulation Scale

In a study conducted on different sample groups, when the patient group was compared to the group without any psychiatric diagnosis, rumination, catastrophization, self-blame, and blaming others strategies were found to be used more[37]. In addition, our study found that the total score of the coronavirus anxiety scale significantly predicted psychiatric disorders. This finding emphasizes that COVID-19 anxiety can lead to more comprehensive mental health problems in pregnant women and indicates that this situation may have long-term psychiatric consequences.

Somatic sensations were observed more in pregnant women with a rumination mindset and pregnant women with slight positive refocusing. It has been noted that rumination is associated with depressive symptoms in pregnant women[12,40,41] . In a similar study, the number of somatic symptoms of ESSS was found to correlate with depression, anxiety, and negative affect, and similarly, in a different sample group, ESSS is the best predictor of depression, anxiety, and alexithymia[42,43]. Somatic symptoms often present as physical reflections of psychological distress. In pregnant women, increased awareness of bodily sensations may foster worry and rumination, which may exacerbate symptoms of anxiety and depression. At the same time, in our study, the total score of the exaggeration of somatic sensations scale predicts smoking status. Pregnant women who use the rumination strategy and pregnant women who have little positive refocusing may have somatic reactions in the long term and may use inappropriate coping methods such as smoking. The cognitive strategy of rumination may also contribute to this behavior, as individuals who ruminate may have difficulty breaking harmful habits. This finding makes it important to address health behaviors that may harm maternal and fetal health, as well as cognitive-behavioral interventions aimed at reducing rumination and somatic sensations. Smoking cessation programs for pregnant women experiencing somatic discomfort should include more effective coping strategies for these sensations.

In our study, the perception of contagiousness, which is a sub-dimension of Coronavirus disease perception, is higher in pregnant women with a high level of education. In several studies, it has been stated that there is a positive correlation between education level and COVID-19 fear[44,45]. In the same way, pregnant women living in a nuclear family have more perception of contagiousness. No studies have been conducted related to this finding. In order to determine the perception of contagiousness of pregnant women with a nuclear family structure, it is necessary to conduct more scientific research.

Conclusion

Cognitive distortions such as catastrophizing and blaming others were found to be the most important factors in the formation of coronavirus anxiety in pregnant women. Pregnant women with intense rumination and less refocusing on positive situations experience more intense bodily

sensations. It was determined that pregnant women with high educational status and a nuclear family structure had an excessive perception of contagiousness. Besides having the pregnancy been stressful, pregnant women's cognitive emotion regulation strategies should be evaluated together with coronavirus concerns during the pandemic, and support programs should be presented to prevent dysfunctional strategies. Therefore, evaluating the emotional regulation strategies of pregnant women together with concerns about coronavirus and providing support programs to prevent dysfunctional coping strategies are of great importance during stressful periods of pregnancy. Cognitive emotion regulation awareness programs should be organized. Educational sessions to be organized for pregnant women should focus on recognizing and managing cognitive distortions and ruminative thoughts. These programs should offer practical strategies for refocusing on positive situations and managing stress, especially during pandemics or health crises. Individualized counseling sessions may be useful for pregnant women with a high level of education or living in nuclear families with a high perception of contagion. Interventions that address their specific cognitive distortions and support them in reducing anxiety through emotional regulation strategies should be offered. In the context of the pandemic, online support groups or telehealth counseling should be offered to pregnant women experiencing anxiety and stress. These platforms should include access to professionals trained in CBT and cognitive emotion regulation strategies.

Limitations

The limitation of our study was having the study conducted in a single center. However, since the pregnancy period is a life event with psychological, physical, and social changes, it is original and current because it causes difficulties in emotion regulation or the use of incompatible strategies too much and is carried out during the pandemic period.

Conflict of interests

The authors have no conflicts of interest to declare that are relevant to the content of this article.

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Contribution of authors

All authors participated in the study. TYB, NG played a role in designing the design and participates in all stages from start to finish. First, TYB, MI, GE and BG collected, analyzed and interpreted data. Next, TYB, MI and NG compiled and reviewed the manuscripts. Finally, all authors revised and approved the final manuscript.

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