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Efficacy of Individual Supportive Counseling on Stress Caused by COVID-19 in Pregnant Women

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ABSTRACT

Background & aim: Pregnant women experience some levels of stress during pregnancy. COVID-19 was able also increase their stress. This study performed to evaluate the efficacy of supportive counseling on stress caused by COVID-19 in pregnant women.

Methods: This clinical trial performed on 97 pregnant women 49 in the intervention and 48 in the control group) referred to comprehensive healthcare centers of Gorgan, Iran in 2021. Data collection tools included an electronic questionnaire containing demographic, fertility-related data, and questions related to the COVID-19 pandemic as well as the coronavirus stress scale. The intervention group received three supportive counseling sessions by 60-90 minutes weekly. The control group received only routine pregnancy care. Data were analyzed by independent t-test, Chi-square test, and Fisher's exact tests using SPSS (version 24).

Results: The results showed that before the intervention, there was no significant difference in the mean score of stress in the intervention group (48.28 ± 5.976) and the control group (47.08 ± 5.158) (P=0.258). However, four weeks after the intervention, the mean score of stress in the intervention group (41.77±5.296) had a significant decrease compared to the control group (46.29±5.220) (P<0.001).

Conclusion: The level of stress during the COVID-19 pandemic is high and providing supportive counseling can reduce pregnancy-specific stress and increase healthy behaviors. Supportive counseling can be used as an effective way to reduce the adverse consequences of stress during pregnancy.

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Introduction

Since late December 2019, the coronavirus caused a new type of disease called (COVID-19) 19 (1-2). This contagious disease not only threatens the physical health of the community and in some cases even leads to death; the pandemics often cause uncertainty and confusion among people. Excessive emotional distress associated with the threat of transmission or having a real infection is an issue which is of great clinical and health importance (3). (COVID-19) pandemic caused stress, anxiety, depression, unresolved grief, and post-traumatic stress disorder (3-4). The trauma and stress caused by social crises,

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especially the experience of (COVID-19) disease, affects individuals, families, and the affected community and may affect many psychological aspects including lifestyle, coping strategies, quality of life, and mental health (5-6).

Pregnancy is a special period of life during which major hormonal changes occur, such as an increase in the level of estrogen, progesterone, and cortisol. These hormonal changes will cause physical and mental physiological changes in the mother (9).

The risks of emotional suffering and mental illnesses increase during pregnancy (10) which leads to physical, emotional, and social changes. In addition, pregnant women are worried about fetal growth and their future responsibilities; therefore, it causes psychological problems including mood changes, fatigue, emotional disorders, depression and anxiety related to pregnancy. Stress during pregnancy is associated with consequences such as premature birth, reduced mental development in children aged two years, low birth weight, respiratory problems and depression (11). Basically, pregnancy is one of the most stressful events in women's life, and this big event can be the basis for vulnerability and depression, and anxiety disorders. In addition, the amount of stress and anxiety increases in the third trimester with the worries resulting from childbirth (9).

The information from the previous epidemics of Sever Acute Respiratory Diseases (SARS) and Middle East Respiratory Syndrome (MERS), as well as physical and mental physiological changes during pregnancy, show that pregnant women are more likely to be infected by (COVID-19) (12). Currently, there is evidence around the world that stress and anxiety increased in pregnant women during the COVID-19 pandemic, and COVID-19 is a risk factor for adverse gynecological and obstetric outcomes during pregnancy (13).

However, little data are available on the effects of COVID-19 on pregnancy. The physiological changes in the anatomy and function of the lungs during pregnancy, along with immune system defects increase the risk of COVID-19 infection for pregnant women. During epidemics, factors such as fear of illness and death and disruption of daily activities due to the necessity of maintaining quarantine lead to stress (14).

Although studies have shown that psychotherapy can improve the general stress of pregnant women, few studies indicated the effects of psychological interventions on the reduction of pregnancy-specific stress. Although there are many psychological interventions such as cognitive behavioral therapy, mindfulness-based cognitive therapy, and yoga to decrease pregnancy stress, further development and testing of psychological interventions are needed to manage pregnancy stress (9). Meanwhile, the effect of supportive counseling on pregnancy-specific stress is not yet known.

Several studies have shown that supportive counseling is effective in people who do not need specific psychological treatment. Therefore, it is used in healthy people who are in a state of crisis or a temporary state of confusion and according to the needs of the people, the number of counseling sessions can be different. Midwifery interventions can play an effective role in reducing mothers' stress. Supportive behavior and explanation of all the solutions can make a good situation for the woman. In stressful situations, midwives' supportive care helps increase the emotional health level of mothers. According to the studies, one of the most important ways to adapt to stressful situations is social support and a person can trust a supportive person and establish a positive relationship between them (15).

Supportive counseling is a relationship with clients as a bridge or support that recognizes the soothing effects of stable and compassionate emotional support in the treatment of patients (16). Winston states that the goal of supportive counseling is to reduce stress symptoms, maintain and restore or improve self-esteem. It can be mentioned that supportive treatment helps clients to adapt better to problems and live more easily with their mental injuries. The final goal of this type of consultation is to maximize the adaptive or integration capacity; so that by strengthening the strengths, the client's tolerance increases and his vulnerability decreases (16).

High-risk groups for COVID-19 include children, elderly, and pregnant women. Limited studies have reported the stress of pregnancy

during the COVID-19 pandemic; therefore, the present study was performed to fill this gap, helping to manage and reducing stress during pregnancy. Considering that pregnant women are one of the vulnerable groups and their mental health guarantees the health of the family and society, it is very important to check their mental health status. Dealing with pregnant women's stress is very important because it affects the mental health of both mother and baby.

Evidence shows that limited studies have reported pregnancy stress during the COVID-19 pandemic, and the present study was conducted to address this gap, help control and reduce stress. The purpose of the aforementioned study is that due to the spread of the disease of COVID-19, pregnant women, in addition to the special stress during pregnancy, COVID-19 also causes their stress and worries to double. It brings concerns such as premature birth and unfavorable pregnancy conditions, and therefore the presence of experts and specialists in order to improve awareness and change the attitude of pregnant women can smooth the pregnancy conditions as in the past. Therefore, counseling can help these people to reduce the stress caused by COVID-19. This study performed to evaluate the efficacy of supportive counseling on stress caused by COVID-19 in pregnant women.

Materials and Methods

This clinical trial study was conducted in 2020-2021 on 97 pregnant women referring to the comprehensive health service centers in Gorgan. After scientific and moral approval and obtaining permission from the ethics committee of Shahroud University of Medical Sciences (IR.SHMU.REC.1399.172), the study was registered in the Iranian Clinical Trial Center (IRCT20210120050092N1).

Participants were women with a gestational age of 6 to 32 weeks, age range of 18-35 years, education level of primary school and above, desire to pregnancy, no history of recurrent miscarriage, and infertility. Exclusion criteria were high-risk pregnancy, history of serious psychiatric illness and history of anxiety problems.

The data was collected using an electronic questionnaire made in the first form. In the beginning, a descriptive study was conducted on 360 pregnant women. First, Gorgan city was divided into three classes of socio-economic status (low, middle and high), and two comprehensive health service centers were randomly selected from each class; so in total, six comprehensive health service centers were selected for sampling.

Based on the study by Salimi et al. (2021) (17) and using the statistical formula and considering the first type error of 0.05 and power of 85%, the sample size was estimated as 100 people (50 in each group).

The questionnaire used in the present study included demographic and midwifery information (gestational age, age, education, occupation, number of pregnancies and deliveries, education and occupation of the spouse), questions about COVID-19, and the Corona stress questionnaire.

The Corona Stress Scale Questionnaire with 18 questions was designed and validated to assess individuals' stress levels. This scale has three subscales of stress mental states (10 questions), physical stress states (five questions), and corona stress-related behaviors (three questions). The total score of corona stress was obtained from the sum of all in this questionnaire, which is between 0 and 72, and higher scores indicate more stress. The scale is scored in the 5-points Likert scale from never (zero point), rarely (1 point), sometimes (2 points), often (3 points), and always (4 points). The reliability of this questionnaire using Cronbach's alpha coefficient subscale of coronary stress mental states was 0.92 (with 10 questions), coronary stress physical states 0.82 (with 5 questions), corona stress-related behaviors 0.57 (with 3 questions), and for the whole CSS-18 was 0.91 and its validity was confirmed by criterion validity.

The eligible pregnant women, based on the inclusion and exclusion criteria, were contacted to participate in the study. During the phone call, they were informed about the study process. After obtaining the electronic informed consent form, they were entered the study. An online questionnaire link was sent to them and due to the lack of internet access in some cases, the questionnaire was completed by telephone. When the number of questionnaires reached

360, sampling was stopped and after calculating the questionnaire mean score, 100 pregnant women whose corona stress questionnaire score was higher than the calculated average (47,68) entered the study. The basis of the allocation sequence table was divided into two groups A and B (before the start of the study, the letter A was named the intervention group and the letter B as the control group). Then, the members of the intervention group were contacted to participate in counseling sessions. In the control group, no intervention was performed and they received only routine pregnancy care.

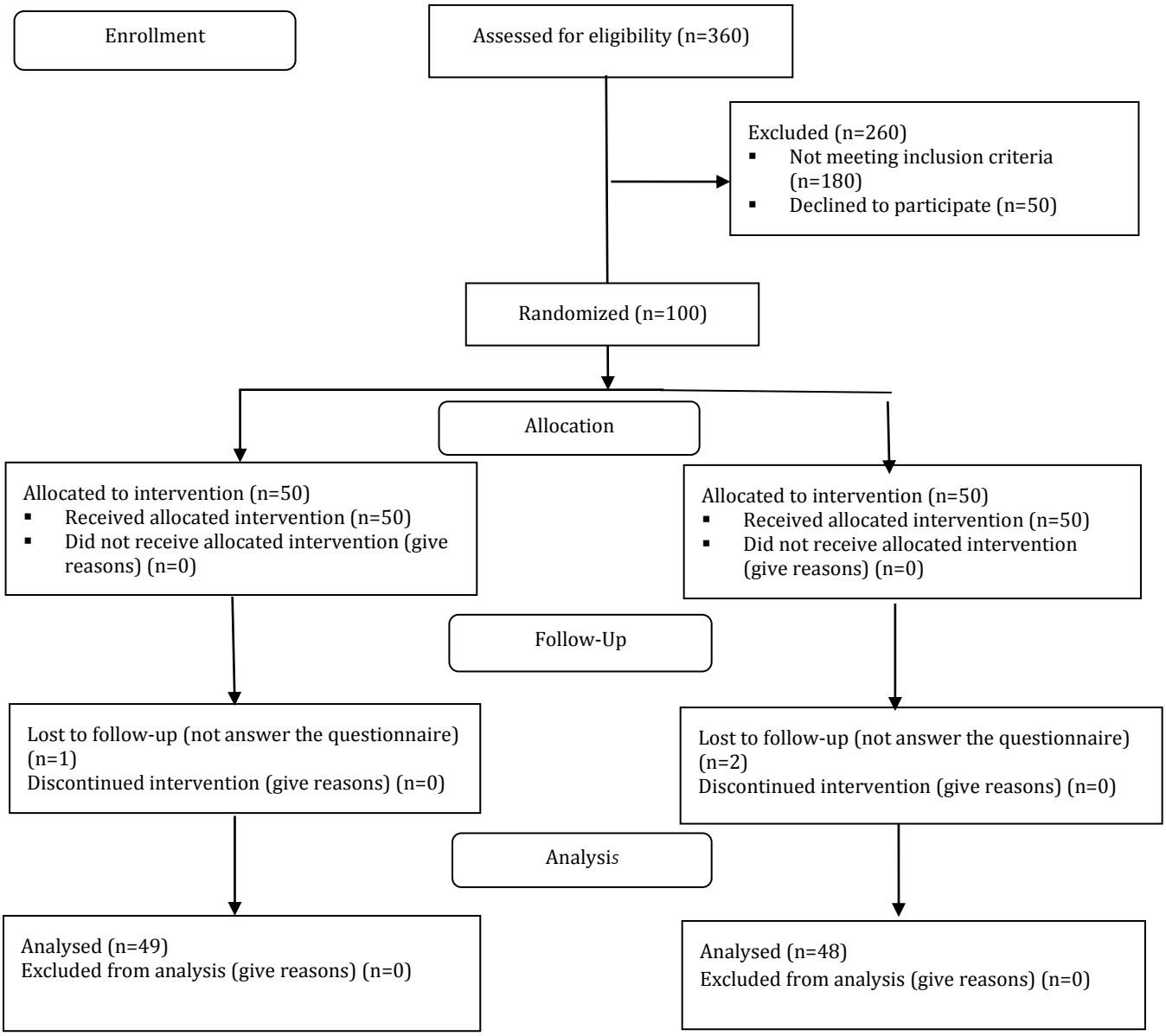

Figure 1. The CONSORT flow diagram of intervention in the two groups

Data were analyzed by SPSS (version 24). Mean, standard deviation, and frequency distribution tables were used to describe demographic information. First, data normality was checked by Kolmogorov-Smirnov test, and based on the results of the Kolmogorov-Smirnov test ($p<0.005$), independent t-test was applied to compare the mean between the two groups. Chi-square and Fisher's exact tests were applied to compare the qualitative variables in the two groups.

Table 1. The content of the training sessions

Session	Objectives	Content
First session	Familiarity with stress and ways to control it, improve self-esteem and improve performance (ego)	1- Talking about stress in COVID-19 2- Provide health advice 3- Talking about past experiences of stress and strategies to reduce stress 4- Familiarity with stress and its signs and symptoms 5- Teaching stress management methods include: - stop thinking, - Teaching appropriate and practical exercises in closed spaces suitable for pregnancy. 6- Presentation of assignments
Second session	Continue ways to control stress and increase adaptive skills	1- Review of the last meeting 2- Questions and answers 3- Examining assignments (stop thinking, teaching suitable and practical sports in closed spaces suitable for pregnancy) 3-Education of relaxation 4- Writing 5-Summary and overview of the contents
Third session	Summary of contents	Review previous sessions, review assignments, and answer client's questions.

Results

A total of 100 pregnant women entered the intervention, but during the research, three women were excluded from the study; two due to not willing to cooperate in the research and one because of being admitted in the hospital due to an accident), and the analysis was performed on 97 pregnant women (Figure 1).

The intervention and control groups were examined in terms of demographic characteristics (age, occupation, education level, gestational age and number of pregnancies).

Based on the Kolmogorov-Smirnov test, the quantitative variables had a normal distribution, so the results of the independent t-test showed that the two groups had no statistically significant difference in the quantitative variables of maternal age and gestational age. According to chi-square test, the two groups were homogeneous in the qualitative variables of education, history of pregnancy and abortion. In addition, according to Fisher's exact test, the two groups were homogeneous in terms of job ($p>0.005$).

Counseling was done individually and in some people on the social network and in some people due to the lack of access to cyberspace in person at the covered health center. The interviewer, a graduate student in Midwifery Counseling, acquired the skill of conducting a counseling session with a supportive counseling approach. Three support-counseling sessions were performed for 60 to 90 minutes, which were held weekly, and 4 weeks after the last session, the questionnaires were again completed and the obtained data was compared between the two groups.

The goals of supportive counseling regarding stress reduction included: a) Familiarity with stress and ways to control it, b) Continue ways to

control stress and increase adaptive skills, and c) Summary of contents (Table 1).

The therapist encouraged clients to express their concerns about COVID-19 while carefully listening to the client's concerns. With detailed explanations, the effect of concern was reflected to the clients and solutions to reduce the concerns and improving the situation was offered. The principles of counseling were based on listening and trying to understand women's views and concerns, respecting their opinions, and establishing a positive and empathetic relationship.

Table 2. Demographic characteristics of the participants in the intervention and control groups

Variables	Intervention	Control	Frequency	P-Value
	N (%)	N (%)	N (%)	
Total population	N=50	N=50	N=100	
Age	29.12± 6.12	29.72 ±6.55	29.42± 6.31	0.637
Gestational age	18.92± 5.46	19± 5.58		0.942
Educational level				0.772
High school	5 (10)	6 (12)	11 (11)	
Diploma	14 (28)	12 (24)	26 (26)	
Bachelor	21 (42)	25 (50)	46 (46)	
Master degree and highe	7 (14)	10 (20)	17 (17)	
Occupation				0.287
Employed	44 (88)	39 (78)	83 (83)	
housewife	6 (12)	11 (22)	17 (17)	
Parity				0.615
0	29 (58)	30 (60)		
1	18 (36)	16 (32)		
2	2 (4)	4 (8)		
3	2 (1)	0 (0)		
Previous abortion				0.521
0	39 (78)	42 (82)	59 (59)	
1	9 (18)	5 (10)	34 (34)	
2	2 (4)	2 (4)	6 (6)	
3	0 (0)	1 (2)	1 (1)	

Table 3. Mean scores of Corona Stress Scale (CSS-18) before and 4 week after educational intervention in intervention and control groups

Variables	Intervention	Control	P value
	Mean ± SD	Mean ± SD	
Pre-test stress	48.28 ± 5.976	47.08 ± 5.158	0.258
Post-stress test	41.77 ±5.296	46.29 ± 5.220	< 0.001
Pre-test-post-test difference	6.77 ± 2.15	0.81 ± 2.36	< 0.001

The Corona Stress Scale Questionnaire indicated that the lowest score was 0 and the highest score was 63 and the mean score of the participants was 35.21±18.24.

Independent t-test indicated that before the intervention, no significant difference was found between the intervention (48.28 ± 5.976) and control groups (47.08 ± 5.158) in the mean

score of stress (P = 0.258). But according to independent t-test, 4 weeks after the intervention, the mean score of stress in the intervention group (41.77 ± 5.296) had a significant decrease compared to the control group (46.29 ± 5.220) (P <0.001).

Significant difference was found between the control and intervention groups in terms of post-test mean score of stress (P<0.001). In addition, the mean of pre-test and post-test difference in the intervention group and the control group was significantly different (P<0.001). Therefore, it can be concluded that the supportive midwifery counseling was effective on the mean stress score of pregnant women with COVID 19 in the intervention and control groups (p < 0.001) (Table 3).

Discussion

The purpose of the current study was to determine the effectiveness of supportive midwifery counseling on stress caused by the COVID-19 epidemic in pregnant women. The results of the study indicated that supportive counseling decreased stress in pregnant women. In a study similar to the current study, supportive counseling significantly reduced characteristic and situational anxiety. As a result, supportive counseling significantly reduces the anxiety score of mothers at risk of preterm delivery (15). Also in the research by Esfandiari et al. (2020) which evaluated the effect of supportive counseling on pregnancy stress as well as general stress and prenatal health behaviors, the results indicate that supportive counseling is effective in reducing stress in pregnant women (18). In the study by Haghighi et al. (2020), individual support counseling on mothers who lost their pregnancies, facilitated the process of mothers' adjustment (19). Another study by Preic et al. (2020) indicated that COVID-19 stress could be reduced by minimizing prenatal care disorders and encourage participating in health behaviors (20). These results can indicate the importance of counseling and support and the consistency of the research results. In the study by Taghizadeh et al. (2008) on traumatic stress after childbirth, the findings showed that counseling provided by midwives to women who have experienced a traumatic childbirth decreased post-traumatic stress disorder in long term (21).

In another study by Samani Nisani et al. (2018), the results showed that the educational-supportive program decreased stress in patients with endometrial cancer (22).

Sarah Meaney et al. (2021) evaluated the pregnant women's experiences of antenatal care, perceived social support, and stress reduction strategies during COVID-19. Pregnancy-specific stress increased during COVID-19 due to limited access to prenatal care and reduced perceived social support. As a result, both formal and informal supportive care is needed, especially for women who may be more vulnerable during an epidemic (23). Moreover, Tamaki's study (2008) showed that home visits by mental health nurses influenced the Japanese women suffering from postpartum depression. Supportive counseling and routine care visits decreased depression symptoms and improved quality of life, but no statistically significant difference was found between the two groups (24), which was inconsistent with the results of the present study. The reason for this difference may be to the difference in the studied population and different supportive counseling approaches (24).

One of the limitations of the present study was the online data collection, because at the time of conducting the research, Corona disease had spread in Gorgan city. The strength of this study, which can be pointed to were the large sample size and using the specified Corona stress scale, which was validated in Iran.

Conclusion

The findings of the current study indicated that supportive counseling reduce the stress of the COVID-19 pandemic in pregnant women. The results obtained from this research can be used in various fields of midwifery such as midwifery education and research, midwifery clinical services and counseling, policy-making, and health management. Midwives and health care providers are the first people who contact with pregnant women. As a result, increasing the awareness and knowledge of this group plays an important role in improving the health of pregnant women, especially in the outbreak of epidemics and pandemics.

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Conflicts of interest

The authors declared no conflicts of interest.

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