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Mental health and social support among Saudi antenatal clients during the COVID-19 crisis

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Abstract

Background: A healthy mental state is essential throughout pregnancy. The Coronavirus disease 2019 (COVID-19) pandemic has posed a challenge to psychological resilience, especially among pregnant women.

Objective: This study measured the mental health and social support of Saudi pregnant women during the COVID-19 pandemic.

Methods: The study utilized a cross-sectional design, with 243 respondents as its convenience sample from hospitals and health centers in Al Duwadimi, Saudi Arabia. This study applied the "Arabic Version of the Depression, Anxiety, and Stress Scale" and the "Multidimensional Scale for Perceived Social Support for Arab Women." The Pearson correlation was used to measure the association between respondents' profiles and social support. Multiple regression analysis was used to measure predictors of mental health.

Results: The pregnant women had normal depression levels, extremely severe anxiety, and severe stress. The pregnant women also perceived high social support. A very weak inverse association was found between age and number of children with overall social support. Social support, especially from the husband, decreased the depression level in the pregnant women.

Conclusion: Pregnant women in Saudi Arabia experienced higher levels of depression, anxiety, and stress during the COVID-19 outbreak, which was linked to the support they received from their relatives. This finding implies the need to enhance support from family members during infectious disease outbreaks.

Keywords: COVID-19, Pregnancy, Mental health, Depression, Anxiety, Social support, Saudi Arabia.

Introduction

Pregnancy is a multifaceted stage in a woman's life that involves physiological and psychological changes.[1,2] Changes during pregnancy significantly impact the different body systems. These changes make the woman susceptible to infection,[3] and mental disorders,[4,5] which are likely to be exacerbated by the Coronavirus disease 2019 (COVID-19) pandemic.[3] During this time, the number of women with psychological diseases has increased,[6] leading to adverse outcomes,[7] and affecting the outcome of their children.[8,9]

COVID-19 has been a global concern since the 3 January 30, 2020.[10] The sudden increase in COVID-19 cases, increasing mortality, and lack of therapeutic management and approved vaccine options have prompted health authorities and government officials to implement strict health protocols such as wearing face masks and social distancing. Moreover, community lockdowns, restrictions on transportation, going out from home, and elimination of events and assemblies have been instituted.[11]

Although levels of stress, anxiety, and depression were high in pregnant women before the pandemic,[12,13] higher levels of anxiety and depression were reported among expectant mothers during the pandemic.[14] When the pandemic initially started, expectant mothers had significant levels of worry and depression for several months.[15,16] Pregnant women are fearful for themselves and the outcome of their pregnancy. These situations may contribute to psychological burdens.[17] Depression in pregnancy is considerably associated with an increased

possibility of postpartum depression.[18] Depressed women also experience poor physical health.[19]

Maternal mental health is vital to infant health. The upbringing of an infant is compromised when the mother is not in a suitable condition to respond or be sensitive to the needs and behavioral cues of her infant. Given these negative effects on expectant mothers, the approach for the early detection of mental health problems and the provision of necessary interventions are vital for mothers' psychological adjustment during the pandemic.

Some studies have examined the mental health of pregnant mothers during the COVID-19 pandemic, however, information on this topic remains extremely limited in Saudi Arabia.

Objectives

This study aimed to measure the mental health and perceived social support in expectant mothers during the COVID-19 outbreak.

Methods

Study design and participants

This study employed a cross-sectional design. The study was conducted in Dawadmi, Riyadh region, Saudi Arabia. Respondents were pregnant women referred to hospitals and health centers in the entire city. Legally married participants, aged 18 years and older were recruited, regardless of gestational age. Women younger than 18 years, single, with pregnancy-complicated situations, and with comorbidities were excluded.

The total number of eligible respondents was 260, and a convenience sample of respondents who met the inclusion criteria was obtained. To determine the power of the sample, post hoc analysis was performed to establish the power achieved by the sample. The results indicated that the sample achieved 99.8% statistical power at 0.05 margin of error and a medium effect size.

Instruments

The first part of the questionnaire was the respondents' profile such as age, gestational age in months, and the number of children. The Arabic version of the "Depression, Anxiety, and Stress Scale (DASS-21)" and the "Multidimensional Scale for Perceived Social Support for Arab Women (MSPSS-AW)" were utilized. The Arabic version of the DASS-21[20] is a 21-item self-report questionnaire for measuring the severity of depression, anxiety, and stress signs. Scores are calculated by adding the scores for the relevant items. The minimum and maximum scores for all subscales are zero and 63, respectively. Scores on the depression scale are calculated as follows: Scores 0-9, 10-13, 14-20, 21-27, and ≥28 indicate normal, mild, moderate, severe, and extremely severe depression, respectively. Scores 0-7, 8-9, 10-14, 15-19, and ≥20 indicate normal, mild, moderate, severe, and extremely severe anxiety, respectively. For stress, scores of 0–14 were considered normal, 15–18 mild, 19–25 moderate, 26–33 severe, and 34 and above extremely severe. Reliability coefficients for the three subscales are high, with 0.93 for depression, 0.90 for anxiety, and 0.93 for stress.[21] The MSPSS-AW was used to measure the degree of support a client receives. The tool has 12 items with three subscales namely the husband, friends, and family. Each subscale has four items and each response option is scored on a seven-point Likert scale (1=very strongly disagree; 7= very strongly agree). Each subscale has a possible score ranging from 4 to 28, and the total possible score ranges from 12 to 84, with higher scores indicating greater social support. The Cronbach's alpha of the husband, friends, and family subscales are 0.89, 0.80, and 0.73, respectively.[22]

Data collection

Researchers accessed the participants through the hospitals and health centers in coordination with doctors, nurses, or midwives assigned to the units. Self-administered questionnaires were provided, and participants' questions were entertained when deemed needed. With the presence of the researcher, respondents were asked to complete the survey in a private room at the hospital or clinic. Data were collected from August to December 2020.

Ethical considerations

Approval to conduct the study was obtained from the Central Institutional Review Board (IRB) of the Ministry of Health and had a Central IRB log number of 20-93E dated June 3, 2020. Permission was obtained from hospital directors and health center officers. Ethical considerations such as autonomy, confidentiality, and anonymity, were strictly observed by the researchers. After eligible participants were found, written consent forms were provided, and the purpose, expectations, processes, risks, and benefits of participation were explained. The study was conducted in accordance with the Declaration of Helsinki.

Statistical analysis

SPSS version 22.1 (SPSS Inc, Chicago, IL, USA) was used for statistical analysis. The continuous variables were expressed as the mean±SD, and the categorical variables

were presented as a percentage and frequency. Pearson correlation was used to associate respondents' characteristics to social support. Multiple regression analysis was used to determine the predictors of mental health among expectant mothers. P values ≤ 0.05 were considered significant.

Results

A total of 260 surveys were distributed, of which 243 were retrieved (response rate: 93.46%). As shown in Table 1, the age is ranged from 18 years to 49 years, with a mean of 32.20±5.72. The mean gestational age in months was 5.42±2.05. The majority of respondents had a high level of social support, as evidenced by a mean score of 4.88±0.99.

Table 1. Characteristics of the respondents (n=243)

Variable	Mean± SD	Range	
Age	32.20±5.72	18 years	49 year
Age of gestation	5.42±2.05	1 month	9 months
Number of children	3.07±2.02	0	10

Husbands provided the greatest level of social support, as evidenced by a mean score of 5.72±1.33, followed by family with a mean score of 4.49±1.64. Friends provided the least social support to respondents. Most pregnant women had normal levels of depression. Meanwhile, 25.9% had moderate depression. Most of the respondents had extremely severe anxiety (35.8%) and 30.5% experienced severe stress [Table 2].

Table 3 shows an extremely weak negative association between age and perceived social support (r=−0.18, p=0.005). Likewise, the number of children showed an extremely weak negative association with perceived social support (r= −0.21, p=0.001).

Table 4 shows that a point increase in the score of social support provided by the husbands decreased the score of depression to 1.91 (p=0.001). A point increase in the mean score of social support provided by family corresponded to an increase of 1.22 (p = 0.001) in the level of depression. Similarly, a point of increase in social support provided by the husbands decreased the scores of anxiety and stress by 0.97, and 0.94, respectively. Also, a point increase in the social support provided by the family corresponds to a 1.57 increase in the level of anxiety of the mothers.

Table 2. Results of the descriptive analyses on the study variables (n = 243)

Variables	Mean± SD	Range	n (%)
Social support			
Husband	5.72±1.33	1.00 – 7.00	-
Friends	4.42±1.25	1.75 – 7.00	-
Family	4.49±1.64	1.00 – 7.00	-
Overall social support	4.88±0.99	2.25 – 7.00	-
Mental health			
Depression	12.08±7.86	0.00 – 32.00	-
Normal	-	-	105 (43.2)
Mild depression	-	-	37 (15.2)
Moderate depression	-	-	63 (26)
Severe depression	-	-	26 (10.7)
Extremely severe depression	-	-	12 (4.9)
Anxiety	16.69±9.19	0.00 – 40.00	
Normal	-	-	32 (13.2)
Mild anxiety	-	-	11 (4.5)
Moderate anxiety	-	-	73 (30)
Severe anxiety	-	-	40 (16.5)
Extremely severe anxiety	-	-	87 (35.8)
Stress	20.99±8.03	0.00 – 40.00	
Normal	-	-	56 (23)
Mild stress	-	-	38 (15.6)
Moderate stress	-	-	65 (26.8)
Severe stress	-	-	74 (30.5)
Extremely severe stress	-	-	10 (4.1)

Table 3. Associations between the respondents' characteristics and social support (n = 243)

Variable	Husband		Friends		Family		Overall social support	
	r	*p*	*r*	*p*	*r*	*p*	*r*	*p*
Age	-0.20	.002	-0.12	.069	-0.07	.265	-0.18	.005
Age of gestation	-0.10	.134	-0.02	.728	-0.06	.388	-0.08	.196
Number of children	-0.26	<.001	-0.07	.302	-0.13	.051	-0.21	.001

Table 4. Results of the multiple regression analyses on depression, anxiety, and stress (n = 243)

Dependent variable	Predictor variable	ß	SE-b	Beta	*t*	*p*	95% CI		R^2 (Adjusted R^2)
							Lower	Upper	
Depression	**Age**	-0.02	0.10	-0.01	-0.18	.855	-0.21	0.17	
	Age of gestation	-0.06	0.23	-0.02	-0.24	.811	-0.52	0.41	0.148 (0.126)
	Number of children	0.48	0.27	0.12	1.75	.082	-0.06	1.02	
	Husband	-1.91	0.39	-0.32	-4.88	<.001	-2.68	-1.14	
	Friends	-0.23	0.39	-0.04	-0.59	.558	-1.00	0.54	
	Family	1.22	0.31	0.26	4.01	<.001	0.62	1.82	
Anxiety	**Age**	-0.01	0.11	-0.01	-0.08	.938	-0.23	0.22	
	Age of gestation	-0.33	0.28	-0.07	-1.19	.237	-0.88	0.22	0.113 (0.091)
	Number of children	0.84	0.33	0.19	2.58	.011	0.20	1.48	
	Husband	-0.97	0.47	-0.14	-2.07	.040	-1.89	-0.05	
	Friends	-0.44	0.47	-0.06	-0.93	.352	-1.36	0.48	
	Family	1.57	0.36	0.28	4.31	<.001	0.85	2.28	
Stress	**Age**	0.05	0.10	0.03	0.47	.640	-0.15	0.25	
	Age of gestation	0.50	0.25	0.13	2.04	.043	0.02	0.99	0.093 (0.070)
	Number of children	0.54	0.29	0.14	1.88	.062	-0.03	1.11	
	Husband	-0.94	0.41	-0.16	-2.27	.024	-1.75	-0.12	
	Friends	-0.48	0.41	-0.08	-1.17	.245	-1.29	0.33	
	Family	0.17	0.32	0.04	0.53	.599	-0.46	0.80	

Discussion

The results showed that pregnant women experienced depression, anxiety, and stress to varying degrees, from mild to extremely severe. These findings are comparable to those of other studies that examined maternal mental health prior to the COVID-19 pandemic.[23,24] A study after the COVID-19 pandemic also reported that pregnant mothers experienced increased levels of anxiety and depression.[25] These studies concluded that pregnant mothers' psychological distress was exacerbated by pandemic-related grief and health concerns.

The present study showed that pregnant women perceived high levels of social support from their husbands. This finding was supported by Tani and Castagna.[26] Family is also acknowledged as another major source of social support, implicating the critical role of family in maintaining mental health during pregnancy.[23] In a study in China, pregnant participants were found to experience higher levels of social support than the general population.[27] Social and emotional support seems to act as a direct protective mantle against negative emotions.

In the present study, age and the number of children were found to be associated with social support. Apparently, mothers with higher ages and increasing parity received less social support. Our findings are in line with what was reported by Peter et al. who studied the association between perceived social support and anxiety in pregnant adolescents.[23]

Regression analysis also showed that social support, particularly from the husband, decreased the level of depression in pregnant mothers. There is also evidence that social support can reduce the likelihood of depression and anxiety during gestation, enhances a pregnant mother's capacity to adjust to stressful situations and deal with her child using constructive and interesting approaches, and reasonably lead to optimum pregnancy outcomes.[28,29] Spouses as an important source of social support decreases the hostile effect of stressful circumstances during pregnancy, such as the COVID-19 pandemic.[27]

However, an increase in social support from family

increased the prevalence of depression and anxiety. Perhaps, social support from other significant members, such as extended family, may lead to disappointment and dissatisfaction and even trigger distress in prenatal mothers. This finding contradicts the commonly known result that lack of family support increases the risk of anxiety as a psychological problem during pregnancy.[23]

Despite the variability of the results, social support received from various sources is one of the major elements that can alleviate the concerns of pregnant women, especially in times of the pandemic. Therefore, active mobilization of the social support system can be one of the possible interventions to address the effect of the pandemic on pregnancy-related psychological distress.

The study was conducted in a single city, and convenience sampling was used. These issues may affect the generalizability of the results. Future studies should be conducted in broader settings, and random sampling should enhance the generalizability of the results. The study did not include pregnant women with comorbidities, and thus the influence of comorbidities on respondents' mental health status was not explored.

Conclusions

Pregnant women in Saudi Arabia experienced higher levels of depression and anxiety during the COVID-19 outbreak, which was linked to the support they received from their families. This implies the need to enhance support from family members during an infectious disease outbreak. Online social support groups for expectant mothers should be established to serve as a medium for catharsis. Moreover, online psychological counseling should be available to address the psychological problems of expectant mothers. Also, an evidence-based psychological intervention should be established for pregnant women during the incidence of highly communicable diseases. Such programs should include training of support systems for antenatal mothers and health care providers about their roles and responsibilities in alleviating the concerns of pregnant women.

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Competing interests

The authors declare that they have no competing interests.

Abbreviations

Coronavirus disease 2019: COVID-19;

Depression, Anxiety, and Stress Scale: DASS-21;

Multidimensional Scale for Perceived Social Support for Arab Women: MSPSS-AW.

Authors' contributions

All authors read and approved the final manuscript. All authors take responsibility for the integrity of the data and the accuracy of the data analysis.

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Availability of data and materials

The data used in this study are available from the corresponding author on request.

Ethics approval and consent to participate

The study was conducted in accordance with the Declaration of Helsinki. Approval to conduct the study was obtained from the Central Institutional Review Board (IRB) of the Ministry of Health and had a Central IRB log number of 20-93E dated June 3, 2020. Permission was obtained from hospital directors and health center officers. All participants signed an informed consent form.

Consent for publication

By submitting this document, the authors declare their consent for the final accepted version of the manuscript to be considered for publication.

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