Psychological Distress and Behavioural Changes in Pregnant and Postpartum Individuals During the COVID-19 Pandemic

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ABSTRACT

Objectives: To determine the psychological and behavioural effects of the COVID-19 pandemic on a Canadian cohort of individuals during pregnancy and the postpartum period.

Methods: In 2020, individuals between 20 weeks gestation and 3 months postpartum receiving maternity care from an urban Canadian clinic were invited to complete a questionnaire. The purpose-built questionnaire used validated scales including the Medical Outcomes Study Social Support Survey (MOS), Depression, Anxiety, and Stress Scale (DASS-21), Edinburgh Postnatal Depression Scale (EPDS), and questions from a SARS study.

Results: One hundred nine people completed the questionnaire (response rate, 55%) of whom 57% (n = 62) were postpartum. Most respondents (107, 98%) were married and had completed post-secondary education (104, 95%). Despite these protective factors, moderate to severe levels of depression (22%), anxiety (19%) and stress (27%), were recorded using the DASS-21, and 25% of participants (26) had depression (score ≥11) using the EPDS. Despite high social support in all MOS domains (median scores 84−100), a majority of participants reported loneliness (69, 67%) and were nearly or totally housebound (65, 64%). About half of participants worried about themselves (50, 46.3%) or their baby (59, 54%) contracting COVID-19, while the majority postponed (80, 74.1%) and cancelled (79, 73.2%) prenatal appointments. Being homebound or feeling lonely / lacking support were significant risk factors for psychological distress ($P = 0.02$) whereas exercise and strong social support were protective ($P < 0.05$).

Conclusion: Pregnant and postpartum individuals experienced moderate to severe depression, anxiety, and stress during the COVID-19 pandemic. Exercise and strong social support were protective. Health care provider enquiry of home circumstances and activity may identify individuals needing enhanced supports.

Keywords: pregnancy; social support; COVID-19; depression; anxiety

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RÉSUMÉ

Objectifs : Déterminer les effets psychologiques et comportementaux de la pandémie de COVID-19 sur une cohorte de Canadiennes pendant la grossesse et le post-partum.

Méthodologie : En 2020, des personnes recevant des soins de maternité dans une clinique urbaine canadienne, entre 20 semaines d'aménorrhée et 3 mois post-partum, ont été invitées à remplir un questionnaire. Le questionnaire expressément conçu pour l'étude repose sur des échelles validées, dont l'échelle de soutien social de l'Étude des issues médicales (MOS); l'échelle de dépression, d'anxiété et de stress en 21 questions (EDAS-21); l'échelle de dépression post-partum d'Édimbourg (EPDS); et des questions tirées d'une étude sur le SRAS.

Résultats : En tout, 109 personnes ont rempli le questionnaire (taux de réponse : 55 %) et 57 % (n = 62) d'entre elles étaient en post-partum. La plupart des répondantes (107; 98 %) étaient mariées et avaient fait des études postsecondaires (104; 95 %). Malgré ces facteurs de protection, l'échelle EDAS-21 a relevé des degrés modéré à sévère de dépression (22 %), d'anxiété (19 %) et de stress (27 %); et l'échelle EPDS a indiqué que 25 % des participantes (26) souffraient de dépression (score ≥ 11). Malgré un soutien social élevé dans tous les domaines de l'échelle MOS (scores médians : 84−100), une

majorité de participantes ont fait état d'un sentiment de solitude (69; 67 %) et se sont dites souvent ou toujours confinées à la maison (65; 64 %). Environ la moitié des participantes s'inquiétaient de contracter la COVID-19 (50; 46,3 %) ou que leur bébé puisse la contracter (59; 54 %); la majorité des participantes ont ainsi reporté (80; 74,1 %) ou annulé (79; 73,2 %) leurs rendez-vous de suivi prénatal. Le confinement à la maison ou le sentiment de solitude et le manque de soutien étaient des facteurs de risque importants de détresse psychologique ($p = 0,02$), tandis que l'exercice et un solide soutien social étaient des facteurs de protection ($p < 0,05$).

Conclusion : Les femmes enceintes et en post-partum ont souffert de dépression, d'anxiété et de stress d'intensité modérée à sévère pendant la pandémie de COVID-19. L'exercice et le soutien social étaient des facteurs de protection. Les fournisseurs de soins de santé peuvent identifier les personnes ayant besoin d'un plus grand soutien en s'informant sur la situation à la maison et les activités.

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INTRODUCTION

Since the recognition of COVID-19 in late 2019, SARS-CoV-2 has spread globally. Although social and physical distancing measures have assisted in slowing its spread, the disruptions SARS-CoV-2 has caused to daily life and social isolation have the potential to create secondary problems. In addition, fear of the illness for oneself and family poses a significant burden on the mental health of pregnant individuals.

Previous research on the impact of natural disasters, including infectious disease outbreaks, on mental health has demonstrated increases in the prevalence of depression, anxiety, insomnia, and stress.[1] Furthermore, the adverse psychosocial consequences associated with quarantine and isolation have disproportionately affected those at higher risk of mental health disorders.[2] The perinatal period is a significant risk factor, given the World Health Organization estimated that, worldwide, about 10% of pregnant individuals and 13% of individuals who have just given birth experience a mental health disorder, primarily depression.[3]

During the 2003 SARS epidemic, pregnant individuals experienced anticipatory worry and heightened depression, anxiety, and stress.[1,4] Some suffered insomnia and feared antenatal visits whereas others cancelled or postponed tests.[4] The research on the COVID-19 pandemic has demonstrated the increased risk of depression and anxiety among pregnant individuals during this much more protracted pandemic. A Canadian survey of pregnant and postpartum individuals, early on in the pandemic, found that rates of depression and anxiety increased significantly to 40.7% and 72%, respectively, compared with prepandemic pregnancy depression and anxiety prevalence of 12% and 15%, respectively.[5] Another 2021 Canadian study found 57.1% of pregnant respondents reported clinically significant levels of depression, and 43% reported significant worry regarding their infant's health.[6] Of concern is how these maternal mood symptoms may impact maternal and child health long-term. Studies have shown perinatal psychological distress can be associated with an increased risk of preterm delivery, low birth weight, and pregnancy complications[7] and may affect mother–infant bonding and childhood cognitive and emotional development.[8,9]

Recognizing psychological distress during pregnancy poses a risk to mother and child, it is important to not only determine the risk of distress within this population during COVID-19, but also how social and physical distancing measures have impacted this risk. This study aimed to determine the prevalence of depression, anxiety, and stress within a sample of prenatal and postpartum individuals and to explore factors associated with this distress, including COVID-19 related distress and behaviours, coping mechanisms such as exercise, and perception of social support.

METHODS

Participants

This study was approved by the research ethics board of Mount Sinai Hospital (20–0123-E). A cross-sectional survey was conducted from June to August 2020, during the COVID-19 pandemic in Toronto, Canada. Lockdown measures had been in place from March 13, 2020. All of the individuals between 20 weeks gestation and 3 months postpartum receiving maternity care from an urban interprofessional family medicine clinic providing comprehensive maternity care were invited to participate. The participants who could comprehend and speak English were invited via email to complete an online survey exploring psychological and behavioural changes related to the COVID-19 pandemic.

Questionnaire Development

The participants completed a questionnaire that was developed for this study by the research team. We included validated tools to assess mood and stress. The questionnaire assessed mental health, COVID-19 related distress, behavioural changes, the pandemic's impact on daily life,

and coping strategies. The questions were informed by the authors' experiences working with pregnant individuals and included questions from a previous study assessing the psychological and behavioural impact of the SARS pandemic during pregnancy. The latter questions had been validated by an ethnographic inquiry.[4] The questionnaire was piloted with 3 pregnant and 1 nonpregnant individual for content clarity and face validity. Maternal depression was examined using the Edinburgh postnatal depression scale (EPDS)[10] and the depression, anxiety, and stress scale (DASS-21).[11] The latter was also used to examine maternal symptoms of anxiety and stress. The EPDS is a self-report questionnaire consisting of 10 items scored on a 4-point Likert scale, with possible scores ranging from 0 to 30, and is validated in the pregnant and postpartum population, demonstrating good internal consistency and reliability (Cronbach's a = 0.77), as well as strong sensitivity (64%–100%) and specificity (73%–100%).[12] The DASS-21 is a self-report questionnaire consisting of 21 items making up 3 subscales (depression, anxiety, and stress). Each item is scored on a 4-point Likert scale from 0 (never) to 3 (almost always). The total scores for each subscale were multiplied by 2 (by convention), with the total scores for each subscale ranging from 0 to 42. The DASS-21 has been found to reliably differentiate between depression, anxiety, and stress, while demonstrating strong internal consistency and reliability (Cronbach $\alpha = 0.93$) and validity (r = 0.67 or greater).[13]

The 19 item self-reported medical outcomes study (MOS) social support survey[14] assesses elements of social support, including emotional support (expression of positive affect, empathetic understanding, and encouragement of expressions of feelings), tangible support (provision of material aid or behavioural assistance), affectionate support (involving expressions of love and affection), and positive social interactions (availability of other persons to do fun activities with).[14] Items are scored on a 5-point Likert scale, from 1 (none of the time) to 5 (all of the time), with total scores for each domain ranging from 0 to 100. Higher MOS scores indicate greater social support. The MOS was validated in a North American population demonstrating good internal validity (r = 0.72) as well as high internal consistency and reliability (Cronbach $\alpha = 0.97$).[14] Given that our sample reported high social support, we treated this variable categorically, with a median cut-off score used to differentiate between high and low social support.

Statistical Analyses

The analyses were conducted using SAS software version 9.4.[15] Descriptive statistics were computed using means and SDs or frequencies and percentages where applicable. The prevalence rates for depression, anxiety, and stress were calculated using frequency distributions. Clinically relevant levels of psychological symptoms for the 3 specified outcomes were determined using scoring guides as well as cut-off scores identified in previous literature assessing psychological distress in pregnant and postpartum women.[16,17] Scores of ≥11 on the EPDS were considered indicative of clinical depression.[18] Depression, anxiety, and stress were identified using the following cut-off scores: DASS-depression ≥ 10, DASS-anxiety ≥8, and DASS-stress ≥15.[16] Univariate log-binomial logistic regression models were used to assess the relationship between socio-demographic factors, COVID-19 related behavioural changes, stressors, and perceived social support with depression, anxiety, and stress as identified through the EPDS and DASS-21.

RESULTS

The questionnaire was completed by 109/200, response rate of 55%. The demographics are reported in Table 1. Forty-three percent were pregnant and 57% were postpartum. Nineteen percent to 27% of participants experienced clinically significant psychological distress as identified through the EPDS and DASS-21 subscales, as reported in Table 2.

Table 1. Sociodemographic characteristics of participants (n = 109)

Characteristics	No. (%) of participants[a]
Maternal age, y, mean ± SD	34 ± 3.7
Marital status	
Married/common-law	107 (98.2)
Pregnancy status	
Pregnant	47 (43.1)
Postpartum	62 (56.9)
History of pregnancy	
Primiparous	74 (67.9)
Household income, CAD$	
>100 000	67 (61.5)
50 000–100 000	24 (22.0)
<50 000	3 (2.8)
Prefer not to say	15 (13.8)
Level of education	
Completion of graduate or professional training	55 (50.5)
Completion of college or university	49 (45.0)
Some college/university/specialized training	4 (3.7)
High school graduate	1 (0.9)

[a]Unless otherwise specified.

Table 2. Proportion of sample experiencing clinically significant psychological distress (n = 103)

Psychological distress scores	No. (%)
EPDS ≥ 11	26 (25.2)
DASS-depression subscale ≥ 10[a]	22 (21.8)
DASS-anxiety subscale ≥ 8[b]	19 (18.6)
DASS-stress subscale ≥ 15[b]	27 (26.5)

[a]n = 101

[b]n = 102

DASS: depression, anxiety, and stress scale; EPDS: Edinburgh postnatal depression scale.

Table 3 displays behavioural changes and participant response to COVID-19. Nearly all respondents (96%) reported more frequent handwashing, with nearly two-thirds (63%) reporting wearing a mask most or all of the time. Although the majority believed it to be unlikely that they or their baby would contract COVID-19 (82% and 72%, respectively), they worried about people contracting COVID-19 (46% themselves, 54% their baby, 59% their partner, 62% friends/relatives). Approximately one-third of participants (36%) reported fear regarding attending appointments, with nearly three-quarters (74%) reporting postponing prenatal appointments and 73% reporting cancelling some appointments (73%).

Table 4 shows factors that were significantly associated with depression, anxiety, and stress. Individuals who were postpartum during the study were at increased risk of depression compared with those who were pregnant (Relative risk [RR] 3.26, $P < 0.01$). Those who reported fear of attending prenatal appointments had a 3-fold increased risk of depression (RR 3.14, $P < 0.01$) and 4-fold increased risk of stress (RR 4.07, $P < 0.01$) compared with individuals who reported no fear.

Coping strategies used by participants during the pandemic were assessed, including seeking information, talking to health care providers (HCPs), mindfulness, and keeping busy—none of which were significantly associated with level of psychological distress. In contrast, exercise and other self-reported feelings of support as identified by the MOS scale were found to be associated with a decreased risk of distress. The individuals who exercised at minimum on a weekly basis had a 61% decreased risk of depression (RR 0.39, $P < 0.01$), 64% decreased risk of anxiety (RR 0.36, $P = 0.02$), and 57% decreased risk of stress (RR 0.43,

Table 3. Behavioural and psychological changes in response to the COVID-19 pandemic

Responses to COVID-19	No. (%) respondents			
Hand hygiene	Less	No change	More	Much more
Increased hand washing	0 (0.0)	4 (4.0)	36 (36.4)	59 (59.6)
Infection prevention measures	Never/rarely	Sometimes	Mostly	All of the time
Use of masks	2 (1.9)	38 (35.5)	34 (31.8)	33 (30.8)
Use of gloves	81 (77.1)	17 (16.2)	5 (4.8)	2 (1.9)
Perception of likelihood of contracting COVID-19	Very unlikely	Unlikely	Likely	Very likely
For baby	19 (17.6)	70 (64.8)	17 (15.7)	2 (1.9)
For self	15 (13.8)	74 (67.9)	18 (16.5)	2 (1.8)
Fear of contracting COVID-19	Not worried	Slightly worried	Worried	Very worried
For baby	9 (8.3)	41 (37.6)	33 (30.3)	26 (23.9)
For self	7 (6.4)	51 (46.8)	42 (38.5)	8 (97.3)
For partner	6 (5.5)	39 (35.8)	45 (41.3)	19 (17.4)
For friends/relatives	1 (0.9)	40 (36.7)	40 (36.7)	28 (25.7)
Worry regarding adverse outcomes	Not worried	Slightly worried	Worried	Very worried
Birth defects caused by medication	35 (32.4)	31 (28.7)	23 (21.3)	19 (17.6)
Miscarriage	36 (33.6)	25 (23.4)	26 (24.3)	20 (18.7)
Preterm delivery	22 (21.0)	38 (36.2)	24 (22.9)	21 (20.0)
Newborn contracting COVID-19 postdelivery	9 (8.5)	38 (35.9)	33 (31.1)	26 (24.5)
Changes to prenatal care	No	Neutral/considered[a]	Yes	—
Fear of attending appointments	55 (50.9)	14 (13.0)	39 (36.1)	—
Postponing appointments	18 (16.7)	10 (9.3)	80 (74.1)	—
Cancelling appointments	18 (16.7)	11 (10.2)	79 (73.2)	—

[a]Fear of attending appointment rated "no," "neutral," or "yes" while postponing and cancelling appointments rated "no," "considered," or "yes."

Table 4. Significant factors associated with depression, anxiety, and stress as measured by the EPDS and DASS-21 (n = 103)

Factor	No (%) of respondents	Depression[a,b]		Anxiety[b]		Stress[b]	
		RR[c] (95% CI)	*P* value	RR[c] (95% CI)	*P* value	RR[c] (95% CI)	*P* value
Patient-related factor							
Pregnancy status							
Pregnant[d]	45 (43.7)	—	—	—	—	—	—
Postpartum	58 (56.3)	3.3 (1.3–8.0)[a]	< 0.01	—	—	—	—
COVID-19–related distress							
Fear of attending appointments							
No/neutral[d]	50 (48.5)	—	—	—	—	—	—
Yes	53 (52.0)	3.14 (1.4–7.2)[a]	< 0.01			4.1 (1.7–9.9)	< 0.01
Worry of contracting COVID-19[e]							
No/neutral[d]	48 (47.1)	—	—	—	—	—	—
Yes	54 (52.9)	3.8 (1.6–9.3)[a]; 3.1 (1.2–7.7)[b]	< 0.01[a]; 0.02[b]			2.5 (1.2–5.5)	0.02
Coping mechanisms							
Exercise[e]							
Monthly or less[d]	27 (26.5)	—	—	—	—	—	—
At least weekly	75 (73.5)	0.4 (0.2–0.8)[a]	< 0.01	0.4 (0.2–0.8)	0.02	0.4 (0.2–0.8)	< 0.01
MOS social support subscales							
Emotional support							
<84.4[d]	49 (47.6)	—	—	—	—	—	—
>84.4	54 (52.4)	0.4 (0.2–0.8)[a]; 0.3 (0.1–0.8)[b]	0.02[a]; 0.01[b]	—	—	—	—
Tangible support							
<87.5[d]	42 (40.8)	—	—	—	—	—	—
>87.5	61 (59.2)	0.5 (0.3–1.0)[a]	0.04	—	—	—	—
Affectionate support							
<100[d]	34 (33.0)	—	—	—	—		
>100	69 (67.0)	0.3 (0.2–0.6)[a]; 0.3 (0.2–0.7)[b]	< 0.01[a]; < 0.01[b]	—	—	0.5 (0.3–1.0)	0.04
Positive social interactions							
<91.7[d]	59 (57.4)						
>91.7	44 (42.7)	0.4 (0.2–1.0)[b]	0.04	—	—	—	—
Personal experiences							
Homebound[e]				—	—		
No/neutral[d]	37 (36.3)	—	—	—	—	—	—
Yes	65 (63.7)	3.1 (1.2–8.4)[a]; 3.7 (1.2–11.7)[b]	0.02[a]; 0.02[b]	—	—	4.43 (1.4–13.8)	0.01

(continued)

Table 4. *(Continued)*

Factor	No (%) of respondents	Depression[a,b]		Anxiety[b]		Stress[b]	
		RR[c] (95% CI)	*P* value	RR[c] (95% CI)	*P* value	RR[c] (95% CI)	*P* value
Uneasiness in the home							
Disagree/neutral[d]	67 (65.0)	—	—	—	—	—	—
Agree	36 (35.0)	5.05 (2.4–10.9)[a]; 5.03 (2.2–11.7)[b]	< 0.01[a]; < 0.01[b]	4.2 (1.7–10.0)	< 0.01	6.4 (2.8–14.4)	< 0.01
Lonely/lack of support							
Disagree/neutral[d]	34 (33.0)	—	—	—	—	—	—
Agree	69 (67.0)	3.51 (1.1–10.9)[a]; 4.68 (1.2–18.9)[b]	0.03[a]; 0.03[b]	—	—	—	—
Lacking security							
Disagree/neutral[d]	60 (58.3)	—	—	—	—	—	—
Agree	43 (41.7)	2.6 (1.3–5.3)[a]; 3.0 (1.4–6.7)[b]	< 0.01[a]; < 0.01[b]	4.8 (2.1–10.9)	< 0.01	5.2 (1.8–14.4)	< 0.01

[a]Outcome measure was EPDS.

[b]Outcome measure was DASS-D-depression subscale.

[c]RR >1 indicates an increase in risk of psychological distress, while an RR <1 indicates a decrease in risk of psychological distress.

[d]Reference group for each analysis; significance at $\alpha = 0.05$.

[e]n = 102 due to missing data.

DASS-S: depression, anxiety, and stress scale; EPDS: Edinburgh postnatal depression scale; MOS: medical outcomes study social support survey; RR: relative risk.

$P < 0.01$) compared with respondents who rarely exercised. Those who reported support through positive social interactions were at a 60% decreased risk of depression, as measured by the DASS-21 (RR 0.40, $P = 0.04$). Additionally, receiving affectionate support was a possible protective factor against stress (RR 0.52, $P = 0.04$).

The personal experiences and reactions to isolation were also assessed. Feeling an "inability to freely leave their home," that is, being homebound, was associated with an approximate 3-fold increased risk of depression (EPDS: RR 3.13, $P = 0.02$; DASS-21: RR 3.72, $P = 0.02$) as well as a 4-fold increased risk of stress (RR 4.43, $P = 0.01$). The participants who expressed a feeling of uneasiness in their home also had a significant increased risk of depression (EPDS: RR 5.05, $P < 0.01$; DASS-D: RR 5.03, $P < 0.01$), anxiety (RR 4.15, $P < 0.01$), and stress (RR 6.42, $P < 0.01$). A feeling of lack of security and lack of support were associated with an approximately 3-fold increased risk of depression (RR 2.64, $P < 0.01$; EPDS: RR 3.51, $P = 0.03$). Both feelings of uneasiness within the home and lack of security due to COVID-19 were associated with a 4-fold increased risk of anxiety (RR 4.15, $P < 0.01$ and RR 4.80, $P < 0.01$, respectively).

DISCUSSION

Depression and anxiety were found to be significantly higher in our pandemic cohort compared with pregnant and postpartum prepandemic cohorts.[17,19] More specifically, postpartum participants (as compared with pregnant) were more likely to report depression on the EPDS. Previous studies have found that depressive symptoms, an unstable mood, and anxiety are significant risk factors for developing peripartum depression.[20] This indicates that pregnant and postpartum individuals who were already susceptible to mental health disorders at baseline may face increased adversity during the pandemic due to several factors, including isolation imposed by social distancing measures.

Over one-third of the participants expressed fear of attending appointments due to COVID-19, with almost three-quarters deciding to postpone or cancel appointments, a similar finding to that reported during the SARS pandemic.[4] Avoiding prenatal visits and antenatal ultrasounds during COVID-19 to reduce risk of exposure may lead to increased rates of unrecognized pregnancy complications.[21]

Feelings of uneasiness being at home, a lack of security, and a feeling of being homebound were more likely to be associated with depression and anxiety. Lockdown and social distancing measures impair the delivery of important support during pregnancy and postpartum—loss of this support can, in turn, lead to a deterioration in mental health. Furthermore, increased family stress, loss of income, and social isolation may increase the risk of domestic violence. One of the unfortunate results of the pandemic lockdown was a global increase in domestic violence.[22] Although this study did not incorporate specific questions about this, it is important for HCPs to consistently assess for and recognize the signs of intimate partner and family violence.

The individuals who reported adequate emotional, tangible, and affectionate support measured by the MOS had a reduced risk of depression and anxiety. The impact of social support as a protective factor during the pandemic has been reported.[23] The importance of social support and its "buffering effect" was also seen in the SARS data, as those that reported more social support were less depressed.[4] Finally, the individuals who exercised at least weekly or more were significantly less likely to have depression, anxiety, or stress, similar to a previous study.[5]

This prospective study had several strengths, as it was able to identify potential risks and protective factors for psychological distress that can be targeted by HCPs as part of prenatal care. Our study had an adequate response rate. The questionnaire used validated scales as well as questions from previous studies and questions informed by our team experience working with pregnant individuals. The questions were piloted and modified based on feedback.

The limitations included data being derived from a single urban centre of generally well-educated, English speaking, and largely financially stable participants. Comfort with completing self-reports and English fluency may have affected participation and results. Furthermore, the individuals from more rural settings and vulnerable populations (e.g., those in low socioeconomic status or racialized populations) were not represented. The generalizability of our findings is therefore guarded, as higher rates of psychological distress may be observed in less well-resourced centres. We also did not collect data on participants' comorbidities and did not account for these in our analyses. It is possible that some may have had higher baseline levels of psychological distress symptoms or preexisting physical concerns limiting their ability or motivation to participate in exercise. Due to sample size constraints we were unable to conduct subgroup analyses comparing pregnant and postpartum patients to further understand potential differences. Further research is

needed to explore potential differences between pregnant and postpartum individuals' responses to stresses such as a pandemic.

How These Findings Can Be Integrated Into Clinical Practice

Routinely asking patients about their psychosocial health using tools such as the EPDS or the Antenatal Psychosocial Health Assessment[24] form may facilitate identifying and addressing concerns. The screening process should also include inquiry about pandemic stressors, isolation, intimate partner violence, financial hardships, and occupational work hazards. The increased risk for depression in postpartum individuals found in this study suggested that additional efforts and resources are needed to counteract a pandemic's potentially long lasting impact on mood, parenting, and family bonding.

It is important to address this issue by seeking out creative ways to help this vulnerable population who may be experiencing reduced access to sources of support. Providers might suggest participation in online communities on social media and mobile health applications as suggested in previous literature.[25]

Missed appointments should prompt further inquiry into mental health. It is important to proactively address fears with patients and reinforce the importance of regular antenatal visits and investigations such as ultrasound imaging that may foster infant bonding. High-risk symptoms and early diagnoses requiring management may be missed due to delays or cancelation of appointments. A modified prenatal schedule that includes a combination of in-person and virtual appointments could relieve some patient anxiety and has been found to be effective.[26]

Finally, encouraging pregnant individuals to exercise may potentially decrease psychological stress. Current guidelines recommend 150 minutes of physical activity per week during pregnancy with potential for modifications as the pregnancy progresses.[27] When not in lockdown, patients should be encouraged to leave the home, to exercise, and to safely engage with people they feel supported by. If social distancing measures are imposed, then patients could use technology and connect with people via video chat platforms.

CONCLUSION

This study identified a significant prevalence of depression, anxiety, and stress in pregnant and postpartum individuals during the COVID-19 pandemic. The individuals who participated in, at minimum, weekly exercise and who described strong social support reported significantly decreased psychological distress. The patients' HCPs should ensure they are asking about mood symptoms and addressing mental health concerns during the perinatal and postpartum period as well as monitoring for missed antenatal visits, laboratory, and imaging tests. The HCPs play a pivotal role in ensuring pregnant individuals receive supportive care throughout the pregnancy and postpartum period given that during a pandemic the usual support from family and friends may be inaccessible. The health care system should anticipate the extra burden of psychological distress that pregnant and postpartum individuals will experience during a pandemic and be prepared to bolster the existing resources to meet their needs.

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