Maternal mental health and coping during the COVID-19 lockdown in the UK: Data from the COVID-19 New Mum Study

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Abstract
Objective: To assess how mothers are feeling and coping during lockdown, and to identify the potential pathways that can assist them.

Methods: A descriptive analysis of maternal mental health, coping, support, activities, lockdown consequences was conducted. Women living in the UK with an infant aged ≤12 months completed an online survey. Linear regression was used to identify predictors of maternal mental health and coping.

Results: A majority of the 1329 participants reported feeling down (56%), lonely (59%), irritable (62%), and worried (71%) to some extent since lockdown began, but 70% felt able to cope. Support with her own health (95% confidence interval [CI] 0.004–0.235), contacting infant support groups (95% CI −0.003 to 0.252), and higher gestational age of the infant (95% CI 0.000–0.063) predicted better mental health. Travelling for work (95% CI −0.680 to −0.121), the impact of lockdown on the ability to afford food (95% CI −1.202 to −0.177), and having an income <£30 000 (95% CI −0.475 to −0.042) predicted poorer mental health. Support with her own health and more equal division of household chores were associated with better coping.

Conclusion: There is a need to assess maternal mental health and identify prevention strategies for mothers during lockdown.

KEYWORDS
Coping; Coronavirus; COVID-19; Maternal health; Mental health; Postpartum

1 | INTRODUCTION

The coronavirus disease 2019 (COVID-19) pandemic resulted in a rapid change of circumstances in the UK population, and many individuals may have experienced loss of livelihood, increased financial burden, reduced personal support systems and professional services, physical isolation, and illness. Therefore, mental health is likely to be affected, as is already evident. A recent paper published in The Lancet has highlighted the urgent need for research that tackles how the effects of COVID-19 on mental health could be eased, especially in vulnerable populations.¹

These effects may be of particular importance for mothers during pregnancy and in the first year after giving birth. According to data
from before the pandemic, perinatal mental illness affects up to 20% of new and expectant mothers, and is associated with an increased risk of preterm delivery, reduced mother–infant bonding, and decreased odds of breastfeeding.\(^2\,^3\) It is expected that this rate has increased as a result of physical and social isolation, changes in perinatal services, and the economic burden of the disease that is disproportionately affecting women.\(^5\,^6\) Several studies have highlighted the increase in distress and psychological problems experienced by pregnant women\(^7\,^9\) and postpartum women during the pandemic.\(^10\,^11\) In the UK, it was recently reported that new mothers with babies aged under 1 year expressed feelings of being robbed of the joys of motherhood,\(^12\) which was also noted in a recent qualitative study.\(^13\)

The aim of the present study was to provide descriptive data on maternal mental health, coping, support, and activities during week 1 of the study (May 27 to June 3, 2020). Possible pathways for the effects of the COVID-19 lockdown on maternal mental health and coping are also investigated.

# 2 | MATERIALS AND METHODS

Women living in the UK aged 18 years or older who have an infant currently under 12 months of age are being invited to complete a one-time, anonymous online survey. Information and links to the survey are shared on Facebook, Twitter, and Instagram pages and groups used by mothers such as infant feeding (breastfeeding, bottle feeding, formula feeding) support, parent/mother/women’s support and neighborhood/town/city groups. It is also being shared via relevant professional groups and contacts, and via word of mouth. The survey, which uses the professional software RedCap, was launched on May 27, 2020, and will remain open until at least December 31, 2020, to capture data relating to the different levels of lockdown restrictions.

The full content of the survey, which includes details about the background factors, infant feeding practices, and impacts of COVID-19, has been described elsewhere.\(^12\) For the present analysis, data were collected regarding:

1. Background characteristics: social and demographic factors
2. Consequences of lockdown: advised to shield/isolate, gave birth before or during lockdown, and impact of lockdown on the family’s ability to afford rent, food, and other essentials.
3. Mother’s activities, access to support, and perceptions: questions asked about how often (0 times, 1–3 times, 4–5 times, or daily) the participants engaged in activities in the previous week, such as walking, exercise, relaxation techniques, and grocery shopping. Frequency of accessing infant support groups and contact with healthcare and mental health professionals was also collected to assess the level of support received. Maternal perceptions of lockdown were assessed retrospectively, where participants were asked to state how much the following statements applied to them since lockdown began (not at all, very little, to some extent, to a high extent): I’ve been feeling down; I’ve been feeling lonely; I’ve had trouble relaxing; I’ve become easily annoyed or irritable; and I’ve been feeling worried. Appetite and disruption to sleep were also similarly assessed. We also included “positive” statements, including: I feel able to cope with the situation; I’ve enjoyed the spring weather; I’ve had the opportunity to chat with my family and friends; I’ve had time to enjoy personal interests or hobbies; I’ve had time to focus on my health; and I’ve had time to exercise.

Since this is an anonymous survey and the participants cannot be identified for follow-up, no formal assessment of depression or anxiety (using validated tools) was undertaken. Participants were also given the option to omit any sensitive questions they did not wish to answer. A list of resources for infant feeding and maternal mental health support, including resources from organizations providing services specifically to people belonging to Black, Asian, and Minority Ethnic (BAME), LGBTQ+, and disabled groups, is provided at the end of the survey.

Ethical approval was obtained from the UCL Research Ethics committee (0326/017). The first page of the survey provides information about the study and, having read this, participants were asked to provide consent to participate before proceeding.

Data from the survey were exported from RedCap, the software collecting survey responses, and analyzed in SPSS version 26 (IBM., Armonk, NY, USA). Descriptive data are shown as number (percentage) or mean ± standard deviation. Descriptive characteristics of the population and description of maternal mental health, support received, activities undertaken, and consequences of lockdown were presented for the whole sample. Principal component analysis (PCA) was conducted for the maternal perceptions; Kaiser-Meyer-Olkin Measure of Sampling Adequacy and the Bartlett test of sphericity were used to assess whether PCA is appropriate. Eigenvalues (of 1), scree plots, and parallel analysis were used to identify the components of perceptions. Regression variables were saved, and then linear regression was conducted to assess the relationship between mental health and coping (outcomes) and support, activities, and consequences of lockdown (as predictors). Directed acyclic graphs (DAG) (Fig. 1) were sketched to identify the minimum adjustment set of confounders and to identify ancestors of the outcome that were dropped from the regression model. On this basis, the linear regression models were controlled for maternal age, baby’s age, ethnicity, gestational age, income, marital status, and number of children in the household. 95% confidence intervals (CI) are presented for all regression coefficients and P values less than 0.05 are considered statistically significant.

# 3 | RESULTS

During the first week of the study, 1329 participants fully completed the survey, the majority of which self-identified as white, were married or living with a partner, lived in a house, and had access to green space within walking distance (Table 1).

Four PCA components were identified from maternal perceptions (Table 2), which were labelled as follows: (1) ‘maternal mental health’ (an indicator of low mood, anxiety, and loneliness, although
not formally assessed); (2) "time availability"; (3) "coping"; (4) appetite and sleep changes (Table S1). In the present study, the main focus was maternal mental health and coping components as outcomes.

More than half of the participants reported feeling down, lonely, and irritable, and had trouble relaxing, and 71% expressed feeling worried to some or to a high extent since the beginning of lockdown (Table 2). Despite these perceptions, the majority of the mothers expressed feeling able to cope with the situation (70%) and enjoy the weather (85%), and having the opportunity to connect with family and friends (92%) to some or to a high extent.

Table 3 shows the activities the participants engaged in during the previous week. The most commonly cited relaxation techniques were yoga, meditation, and breathing; 37% of mothers started using these methods during lockdown whereas the rest practiced relaxation techniques regularly before the lockdown. Fifty-five mothers travelled to work at least once a week. Of these, 38% (n=21) worked in the NHS or medical/healthcare sector, followed by business/administration/accounting (n=9) and education (n=7).

The different types of support received were assessed (Table 4). Only nine participants reported attending a face-to-face mother and baby or breastfeeding support group and four women had an in-person session with a mental health professional, whereas the rest had contact online or by phone.

For consequences of COVID-19 and the lockdown, 27% of mothers delivered during the lock down period, which has previously been shown to have had implications for birth and feeding plans. In addition, 8% were advised to isolate due to a pre-existing health condition. Around one-third expressed a minor to major impact of lockdown on the ability to pay rent or mortgage payments (37%), pay for food (32%), and pay for other essentials such as utilities and medication (28%).

Table 5 shows that getting enough support with the mother’s own health and contact with mother and baby support groups were predictors of better mental health. Mothers who reported that household chores were “only a little” more equally divided had better mental health than those who reported they were more equally divided “to a great extent.” Travelling for work, the impact of the COVID-19 lockdown on the ability to afford food, and a lower household income (<£20,000–£30,000) were associated with worse mental health.

Table 6 shows that getting enough support with the mother’s own health predicted better coping. Conversely, with each unit decrease in

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Table 1: Background characteristics of women who completed the survey in week 1.

| Description                                      | Value       |
|--------------------------------------------------|-------------|
| Maternal age (years)                             | 31.7 ± 4.7  |
| Infant age (months)                              | 4.8 ± 3.1   |
| Infant gestation (weeks)                         | 39.3 ± 1.8  |
| Male infant                                      | 675 (51)    |
| Having other children in the household           | 601 (45.2)  |
| Maternal ethnicity                               |             |
| White                                            | 1251 (94.0) |
| Mixed/multiple ethnic groups                     | 35 (2.7)    |
| Black/African/Caribbean/black British            | 6 (0.5)     |
| Asian/Asian British                              | 28 (2.1)    |
| Arab                                             | 1 (0.1)     |
| Other ethnic group                               | 3 (0.2)     |
| Maternal education                               |             |
| ≤5 GCSE grade A–C                                | 58 (4.4)    |
| ≥5 GCSE grade A–C                                | 100 (7.5)   |
| A levels/equivalent                              | 280 (21.0)  |
| Bachelor’s degree                                | 521 (39.1)  |
| Master’s degree                                  | 183 (13.7)  |
| PhD/professional qualification                   | 180 (13.5)  |
| Living conditions                                |             |
| Flat/apartment                                   | 173 (13.0)  |
| House/bungalow                                   | 1142 (85.8) |
| Mobile/temporary structure                       | 9 (0.7)     |
| Access to green space within walking distance    | 1306 (98.1) |
| Marital status                                   |             |
| Married/Civil partnership/Cohabitation           | 1267 (95.2) |
| Single parent—living on own                      | 34 (2.6)    |
| Single parent—living with family                 | 16 (1.2)    |
| Household income                                 |             |
| <£20,000                                         | 87 (6.5)    |
| <£30,000                                         | 139 (10.4)  |
| <£45,000                                         | 238 (17.9)  |
| <£75,000                                         | 428 (32.2)  |
| <£100,000                                        | 200 (15.0)  |
| >£100,000                                        | 179 (13.4)  |
| Prefer not to say                                | 53 (4.0)    |

Values are given as number (percentage) or mean ± standard deviation.
the extent to which the participants perceived the household chores have become more equally divided, coping decreases.

4 | DISCUSSION

The findings of the present survey illustrate that despite the seemingly low-risk population, a large proportion of new mothers reported symptoms of low mood, anxiety, and loneliness during the lockdown. Given the short- and long-term consequences of perinatal mental illness on the physical and psychological well-being of the mother and baby, there is an urgent need for action to support new mothers who have been affected.

It was found that the perception of how equal the division of chores among household members has been since lockdown began was associated with mental health and coping with the lockdown. In the present study, 63% of women felt that chores had become more equally divided since lockdown began. This is similar to the results of The Institute for Fiscal Studies, which showed that during lockdown, in two-parent opposite-gender families, fathers have doubled the time they spend on child care, but mothers still spent more time on child care and domestic responsibilities.

In the first year postpartum, women commonly experience a wide range of health problems such as tiredness, back pain, urinary incontinence, and more frequent minor illnesses. The association between physical health and mental health problems in the first year after childbirth is
The present study highlighted that travelling to work at least once in the previous week predicted worse mental health, with the most commonly reported jobs relating to the healthcare sector. Data from previous pandemics and from this pandemic in China and Italy is consistent with this, where 50.3% and 44.6% of healthcare workers reported experiencing depression and anxiety, respectively. The higher risk of mental health problems for frontline workers during the pandemic, and for women in the postpartum period in general, suggests that these women are at particular risk.

Previous studies have shown that BAME groups, especially black women, and disadvantaged groups are disproportionately affected by COVID-19. The results from the present study did not show that ethnicity was associated with mental health or coping, probably due to the small sample size for the non-white groups, but they indicated that having a lower income (<£20,000–£30,000) and the financial impact of COVID-19 predicted worse mental health. It is also important to consider the quality of the housing, particularly its ability to provide adequate personal and outdoor space for household members. For example, 12% of households in Great Britain do not have access to a private or shared garden, and black people in England are four times less likely than white people to have access to outdoor space. These inequalities partially explain the variation in mental health outcomes among different groups. The majority of participants in the present study self-identified as white, were married or living with a partner, lived in a house, and had access to green space within walking distance. This highlights the need to capture data from a more ethnically and socioeconomically diverse group of women.

Data from before the pandemic underlined that mothers of preterm infants experience higher stress, anxiety, and depression. The lockdown measures, resulting in a decrease in support networks, changes in hospital policies, and concern about COVID-19 infection, are likely to have exacerbated the mental health problems experienced by those mothers. The results of the present study suggest that a lower gestational age was associated with worse maternal mental health. Therefore, more attention should be given to this group.

Despite the high proportion of new mothers reporting symptoms of low mood, anxiety, and loneliness, a high proportion also indicated being able to cope with the situation. In this study, going outside for physical activity and relaxation techniques were investigated as potential methods used by the participants to cope with the lockdown. A previous study has shown that pregnant women engaging in at least 150 minutes of physical activity each week during the lockdown had lower anxiety and depression scores. No association was found between going out for physical activity and maternal mental health; however, the relatively uniform high levels of activity in the present study reduce the ability to detect an association between variability in level of activity and mental health or coping. As for relaxation techniques, a survey of 5545 Spanish

| TABLE 4 Support measures for women who completed the survey in week 1. |
|-----------------------------------------------|
| Got or getting enough support and help with own health |
| Yes | 783 (58.8) |
| No | 545 (40.9) |
| Had contact with a mother and baby or breastfeeding support group |
| 0 times | 976 (73.3) |
| 1-3 times | 238 (17.9) |
| 4-5 times | 53 (4.0) |
| Daily or more | 58 (4.4) |
| Had contact with a health professional (GP, health visitor, midwife) |
| 0 times | 791 (59.4) |
| 1-3 times | 496 (37.3) |
| 4-5 times | 31 (2.3) |
| Daily or more | 5 (0.4) |
| Attended an appointment with a mental health professional |
| 0 times | 1236 (92.9) |
| 1-3 times | 81 (6.1) |
| 4-5 times | 10 (0.8) |
| Daily or more | 1 (0.1) |
| I feel the household chores are more equally divided among household members |
| Not at all | 494 (37.1) |
| Very little | 343 (25.8) |
| To some extent | 298 (22.4) |
| To a high extent | 186 (14.0) |

Abbreviation: GP, general practitioner.
Values are given as number (percentage).
In the previous week.
adults during the lockdown found that relaxing activities (such as yoga, gardening, and listening to music) were associated with lower symptoms of anxiety and depression but only before correction for multiple comparisons.\(^{24}\) Similarly, in the present study, practicing relaxation techniques did not predict coping or mental health, possibly due to the variation in frequency, duration, and type of activities. Given the potential benefit of relaxation techniques and physical activity on anxiety and depression, further research is warranted.

With at least 98% of adults (16–45 years) in the UK accessing the Internet at least once a day, the online nature of this survey allowed for the rapid and remote capture of the experiences of mothers during the pandemic and made it possible to reach mothers from

| TABLE 5 | Predictors of maternal mental health (anxiety, low mood, and loneliness).\(^a\) |
|---------|---------------------------------|
| Variable | B     | 95% CI          | P value |
| Contact in person, by phone, or online | Healthcare professionals\(^b\) | -0.045 | -0.167 to 0.077 | 0.470 |
| | Mother and baby support groups \(^b\) | 0.124 | -0.003 to 0.252 | 0.056 |
| | Mental health professional\(^b\) | -0.197 | -0.418 to 0.025 | 0.082 |
| Extent to which chores are more equally divided\(^c\) | Enough help with own health | 0.120 | 0.004–0.235 | 0.042 |
| | Not at all | 0.101 | -0.073 | 0.255 |
| | Very little | 0.256 | 0.075–0.438 | 0.006 |
| | To some extent | 0.091 | -0.094 to 0.277 | 0.335 |
| | Shopped at grocery store/pharmacy \(^b\) | 0.063 | -0.051 to 0.176 | 0.278 |
| | Went outside for a walk or exercise \(^b\) | 0.138 | -0.109 to 0.385 | 0.274 |
| | Traveled for work\(^b\) | -0.401 | -0.680 to -0.121 | 0.005 |
| | Practiced a relaxation technique\(^b\) | 0.113 | -0.020 to 0.247 | 0.095 |
| | Gave birth during lockdown | 0.086 | -0.082 to 0.254 | 0.313 |
| Impact of lockdown on the ability to afford rent\(^d\) | Advised to shield due to risk | -0.045 | -0.318 to 0.228 | 0.745 |
| | Minor | 0.075 | -0.101 to 0.251 | 0.405 |
| | Moderate | 0.117 | -0.110 to 0.345 | 0.312 |
| | Major | 0.063 | -0.312 to 0.437 | 0.743 |
| | Minor | 0.170 | -0.035 to 0.375 | 0.105 |
| | Moderate | -0.204 | -0.518 to 0.109 | 0.202 |
| | Major | -0.689 | -1.202 to -0.177 | 0.008 |
| | Minor | -0.081 | -0.313 to 0.151 | 0.494 |
| | Moderate | 0.193 | -0.140 to 0.526 | 0.255 |
| | Major | 0.329 | -0.234 to 0.891 | 0.252 |
| Age | Maternal age | 0.004 | -0.009 to 0.017 | 0.525 |
| | Infant’s age | 0.017 | -0.007 to 0.041 | 0.154 |
| | Infant’s gestational age | 0.031 | 0.000–0.063 | 0.051 |
| Ethnicity\(^e\) | BAME | -0.166 | -0.398 to 0.066 | 0.160 |
| Marital status\(^f\) | Single—living alone | 0.047 | -0.311 to 0.405 | 0.798 |
| | Single—living with family | -0.078 | -0.598 to 0.443 | 0.770 |
| Income\(^g\) | £30,000 | -0.258 | -0.475 to -0.042 | 0.019 |
| | £75,000 | -0.045 | -0.204 to 0.113 | 0.575 |
| | £100,000 | -0.067 | -0.260 to 0.126 | 0.496 |
| Number of children in the household | 1\(^h\) | -0.005 | -0.120 to 0.111 | 0.939 |

Abbreviations: BAME, black, Asian and minority ethnic group; CI, confidence interval; PCA, principal component analysis.
P values <0.05 were considered statistically significant and are given in bold.
\(^a\)PCA result of mental health. Higher scores reflect better mental health.
\(^b\)Participated in activities at least once in the previous week.
\(^c\)High extent as reference.
\(^d\)No impact as reference.
\(^e\)White ethnicity as reference.
\(^f\)Married/civil partnership/cohabitation as reference.
\(^g\)Income >£100,000 as reference.
\(^h\)More than one child as reference.
TABLE 6 Predictors of coping.\textsuperscript{a}

| Variable | Variable | B  | 95% CI         | P value |
|----------|----------|----|----------------|---------|
|          |          |    |                |         |
| Contact in person, by phone or online | Healthcare professionals\textsuperscript{b} | -0.101 | -0.222 to 0.019 | 0.100 |
|          | Mother and baby support groups\textsuperscript{b} | -0.092 | -0.218 to 0.035 | 0.155 |
|          | Mental health professional\textsuperscript{b} | -0.121 | -0.340 to 0.099 | 0.281 |
| Extent to which chores are more equally divided\textsuperscript{c} | Enough help with own health | 0.388 | 0.247 to 0.530 | 0.000 |
|          | Not at all | -0.284 | -0.456 to -0.113 | 0.001 |
|          | Very little | -0.245 | -0.424 to -0.065 | 0.008 |
|          | To some extent | -0.216 | -0.400 to -0.032 | 0.021 |
|          | Shopped at grocery store/pharmacy\textsuperscript{b} | 0.044 | -0.068 to 0.156 | 0.444 |
|          | Went outside for a walk or exercise\textsuperscript{b} | -0.086 | -0.330 to 0.159 | 0.493 |
|          | Travelled for work\textsuperscript{b} | -0.199 | -0.476 to 0.078 | 0.159 |
|          | Practiced a relaxation technique\textsuperscript{b} | 0.001 | -0.131 to 0.133 | 0.990 |
|          | Gave birth during lockdown | 0.031 | -0.135 to 0.198 | 0.711 |
| Impact of lockdown on the ability to afford rent\textsuperscript{d} | Advised to shield due to risk | -0.091 | -0.362 to 0.179 | 0.508 |
|          | Minor | -0.033 | -0.207 to 0.142 | 0.714 |
|          | Moderate | -0.061 | -0.286 to 0.164 | 0.596 |
|          | Major | -0.002 | -0.373 to 0.369 | 0.991 |
|          | Minor | -0.145 | -0.348 to 0.058 | 0.162 |
|          | Moderate | -0.088 | -0.399 to 0.223 | 0.578 |
|          | Major | -0.429 | -0.936 to 0.079 | 0.098 |
|          | Minor | 0.003 | -0.227 to 0.233 | 0.980 |
|          | Moderate | 0.215 | -0.114 to 0.545 | 0.200 |
|          | Major | 0.543 | -0.014 to 1.099 | 0.056 |
| Impact of lockdown on the ability to afford food\textsuperscript{d} | Maternal age | -0.003 | -0.016 to 0.010 | 0.605 |
|          | Infant’s age | 0.021 | -0.003 to 0.044 | 0.089 |
|          | Infant’s gestational age | 0.023 | -0.008 to 0.054 | 0.142 |
| Impact of lockdown on the ability to afford other essentials\textsuperscript{d} | BAME | -0.144 | -0.374 to 0.085 | 0.218 |
| Ethnicity\textsuperscript{e} | Single—living alone | 0.039 | -0.315 to 0.394 | 0.827 |
|          | BAME | -0.144 | -0.374 to 0.085 | 0.218 |
| Marital status\textsuperscript{f} | Single—living with family | 0.220 | -0.296 to 0.735 | 0.404 |
|          | Married/civil partnership/cohabitation as reference. | 0.220 | -0.296 to 0.735 | 0.404 |
| Income\textsuperscript{g} | <£30,000 | -0.185 | -0.400 to 0.029 | 0.090 |
|          | <£75,000 | -0.059 | -0.216 to 0.098 | 0.459 |
|          | <£100,000 | -0.007 | -0.199 to 0.184 | 0.941 |
| Number of children in the household | 1\textsuperscript{b} | 0.039 | -0.076 to 0.154 | 0.503 |

Abbreviations: BAME, black, Asian and minority ethnic group; CI, confidence interval; PCA, principal component analysis.

P values <0.05 were considered statistically significant and are given in bold.

\textsuperscript{a}PCA result of coping. Higher scores reflect better coping.

\textsuperscript{b}Participated in activities at least once in the previous week.

\textsuperscript{c}High extent as reference.

\textsuperscript{d}No impact as reference.

\textsuperscript{e}White ethnicity as reference.

\textsuperscript{f}Married/civil partnership/cohabitation as reference.

\textsuperscript{g}Income above 100K as reference.

\textsuperscript{h}More than one child as reference.

a wide geographical region. However, the use of social media might have resulted in biases in sampling: for example, women may not be part of the relevant social media groups or may have missed the links that were shared. It is also possible that this method has contributed to the underrepresentation of BAME and low-income mothers (<£20,000–£30,000) in this sample, which is the main limitation of the present study. To tackle this, more emphasis is being placed on sharing the survey by word of mouth as well as collaborations with other organizations to reduce the reliance on social media. Another limitation is that it was not possible to compare the rates of depression or anxiety.
in new mothers during lockdown with the rates before the pandemic as mental illness was not formally assessed. However, a larger proportion of the general population do not fit the diagnoses of depression or anxiety, but are rather at risk, which makes the present results more generalizable. Changes in ‘symptoms’ of mental health and coping over the different phases of lockdown will also be monitored.

The results of this survey indicate that a large proportion of new mothers in the UK are experiencing symptoms of low mood, anxiety, and loneliness; mothers of preterm infants, those on a low income, and those who work to travel are particularly at risk. However, the data also suggest that providing support for the mother’s own health and with household chores are beneficial for maternal mental health and coping. Overall, the findings highlight the urgent need to assess maternal mental health and to create prevention strategies for mothers who are giving birth during the different stages of lockdown during this COVID-19 pandemic.

AUTHOR CONTRIBUTIONS
All authors contributed to the design and planning of the study. SD, MF, and JW contributed to the data analysis. SD drafted the manuscript. All authors read and approved the final manuscript.

CONFLICTS OF INTEREST
The authors have no conflicts of interest.

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SUPPORTING INFORMATION
Additional supporting information may be found online in the Supporting Information section at the end of the article.

Table S1. Principal component analysis: rotated component matrix.