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The impact of the coronavirus pandemic curfew on the psychosocial lives of pregnant women in Jordan

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Abstract

Objectives: Worldwide the COVID-19 pandemic has negatively affected the health and psychosocial lives of people. International guidelines recommend special attention to pregnant women during pandemics and national emergencies. This study aimed to report the impact of the COVID-19 pandemic curfew on the psychosocial lives of pregnant women in Jordan.

Design: A cross-sectional study was conducted and included women who were pregnant during the COVID-19 curfew in Jordan, which took place between mid-March and mid-June of 2020.

Settings: A web-based survey that was posted on various social media platforms.

Participants: Women who at the time of the study were 18 years of age or more, were living in Jordan, and were pregnant during the curfew.

Measurements and findings: Data collected included women’s characteristics, the impact of the curfew on the pregnancy, physical activity, and psychosocial lives and the barriers to seeking healthcare, in addition to pregnancy and delivery details, and changes in nutrition and supplements intake.

A total of 877 women responded to the survey. The results showed that 21.1% of the respondents did not receive any antenatal care (ANC) during the curfew. The respondents also reported that the main barriers for seeking ANC included healthcare facilities being closed (85.2%), the need for travel permits (76.8%), financial difficulties (63.9%), and fear of catching the COVID-19 virus (60.1%). Furthermore, 93.3% reported that they had psychological stress, and 29.9% reported that they had at least one form of domestic violence. Statistically significant associations existed between various women’s characteristics, obstetric, psychosocial factors, and the level of psychological stress.

Key conclusions: The COVID-19 pandemic curfew, which was applied in Jordan, resulted in a negative impact on the psychosocial lives of pregnant women. As a result, pregnant women did not receive optimal antenatal care and experienced higher degrees of psychological stress and domestic violence.

Implications for practice: The findings of our study may encourage national healthcare policymakers to ensure the provision of appropriate psychosocial support of pregnant women during large scale emergencies.

Introduction

In December 2019, the highly contagious coronavirus disease (COVID-19) emerged in China and very rapidly spread across the world. Many countries, including Jordan, adopted several measures to control disease transmission. These measures included early detection, isolation of suspected and confirmed cases, travel restrictions, and widespread quarantines. The first case of COVID-19 in Jordan was reported on the 2nd of March 2020 (Jordanian Ministry of Health, 2020). Furthermore, by mid-March and in response to the rapid spread of the disease in the surrounding countries and worldwide, the Jordanian authorities adopted various measures to contain the spread of the COVID-19 infection. These measures are summarized in Table 1 (Jordanian Ministry of Health, 2020).
The COVID-19 pandemic curfew has changed daily routine activities across the world. These changes occurred abruptly and subsequently caused physical and psychological burdens on people, including pregnant women. The Royal College of Obstetricians and Gynaecologists (RCOG) stated that pregnant women do not appear to be more likely to contract the COVID-19 infection than the general population. However, if infected, they can theoretically have more severe symptoms presumably because pregnancy alters the immune system and its response to viral infections (Anon, 2021a).

The World Health Organization (WHO) Antenatal Care (ANC) model recommends that the first ANC consultation should happen within the first 12 weeks of pregnancy. This reflects the importance of the booking visit, where various health issues may be discussed. Furthermore, the WHO ANC guideline has recommended an increase in the number of ANC consultations to eight instead of four. In comparison with four consultations, eight were associated with eight per 1000 births reduction in the stillbirth rate.

As a result of the pandemic, a report by Coxon et al. (2020) showed that ANC services in Europe were reduced to minimize the risks of infection to both pregnant women and healthcare workers. Furthermore, Stefanovic and Kurjak (2020) showed in a public media report that the pandemic has affected the lifestyles of pregnant women such as dietary habits, exercise, and smoking, in addition to an increase in anxiety, stress, depression, and domestic violence. The aim of this study was to report the impact of the COVID-19 pandemic curfew on the psychosocial lives of pregnant women in Jordan.

Material and methods

This cross-sectional web-based study was conducted between September and November of 2020. An electronic survey was posted through various social media platforms. Inclusion criteria required the woman to be 18 years of age or more, resident of Jordan during the curfew which happened between mid-March and mid-June 2020 and was pregnant during the COVID-19 curfew. In addition, recruited women were required to have access to social media platforms. The web-based approach was adopted for various reasons including the severely limited mobility during the curfew, the reduction of the risks of transmitting COVID-19 infection between the research team and the recruited women, and the easy access to the internet and social media platforms in Jordan where 80% of adults have internet access and 94% of them use social networks as reported by the Pew Research Center (Poushter et al., 2018). In addition, web-based surveys can reach a larger population and reduce research time and cost (Rosa et al., 2015).

The study questionnaire was designed by the researchers. Because ANC in Jordan is provided by obstetricians, the validity of the questionnaire was established by five obstetricians. In addition, the survey link was sent to 30 randomly selected pregnant women who were at the time of the study were under the care of the researchers. They were asked to complete the questionnaire and provide their comments which were considered in the final version of the questionnaire, which was posted on various social media platforms and was left open for nine weeks. Furthermore, participation in the study was voluntary, and no personal identifying data was collected. Additionally, the responses in the survey were anonymous, and participants could withdraw from the study at any time before submitting their responses. A submitted response was considered as consent to participate in the study. To increase the number of participants who submitted the survey, it was not mandatory to answer all the questions and none of the questions in the survey were mandatory. Additionally, participants were given the choice to answer or not to answer any question or domain in the study and were able to submit the survey whenever they liked. Furthermore, no incentives were offered to the participants.

The questionnaire was divided into four domains. The first domain was about the women’s characteristics such as age, height, weight, and educational achievement. The second domain included information about the impact of the curfew on pregnancy and barriers to seeking healthcare in addition to pregnancy and delivery details. The third domain was about changes in nutrition and supplements intake, smoking, and physical activity. The fourth domain was about the psychosocial impact of the curfew, where women were asked if they were exposed to domestic violence either verbal or physical. Regarding the psychological stress level, women were asked to rate their level of stress using a numeric analogue scale (NAS), ranging from zero to ten, where zero meant no stress and ten meant very high-stress level (Karvounides et al., 2016).

This was an open survey; therefore, a convenience sample was adopted. Data analysis was performed using the IBM Statistical Package for Social Sciences (SPSS) for Windows, Version 22.0. Armonk, NY. Continuous variables were expressed by means and standard deviations, and categorical variables were shown as numbers and frequencies. Various variables were regrouped for better comparisons. According to the degree of psychological stress women experienced during the curfew, they were further grouped into low and high levels based on the mean, where scores below the mean were considered low and scores at or above the means were considered high. Correlations where appropriate were performed using the Pearson’s correlation coefficient and Chi-square. The alpha level of 0.05 was considered statistically significant.

This study was granted ethical approval by the Institutional Review Board of Yarmouk University in accordance with the Declaration of Helsinki. The committee’s reference number is 1/136/2020.

Results

During the study period, 877 women completed the survey. The response rates for the four study domains varied widely, with the highest response rate being in the women’s characteristics domain and the lowest in nutrition. Table 2 shows the response rates for the four domains.
Table 2
Response rates to the four study domains.

| Statistics          | Study domain       | Characteristics | Obstetrics | Psychosocial | Nutrition |
|---------------------|--------------------|-----------------|------------|--------------|-----------|
| Mean number of respondents | 866.9 | 589.7 | 602.5 | 560.6 |
| Percentages         | 98.8 | 67.2 | 68.7 | 63.5 |
| Standard deviation  | 6.2 | 147.7 | 149.8 | 94.8 |
| Minimum response    | 856.0 | 466.0 | 4100 | 465.0 |
| Maximum response    | 877.0 | 868.0 | 853.00 | 798.0 |

Table 3
Women’s characteristics.

| Valid | Percentage | Number | Category | Number of Respondents | Variable |
|-------|------------|--------|----------|-----------------------|----------|
| 19.5  | 171        | 18-24  |          | 877                   | Age groups (years) |
| 66.2  | 581        | 25-34  |          |                       | Place of residence |
| 14.3  | 125        | 35-45  |          |                       | Education |
| 68.3  | 599        | Center of Jordan | 877 | Body mass index |
| 22.9  | 201        | North of Jordan |          |                       |          |
| 8.8   | 77         | South of Jordan |          |                       |          |
| 32.0  | 282        | High school or less | 877 |          |
| 13.1  | 116        | Diploma |          |                       |          |
| 54.9  | 479        | University |          |                       |          |
| 4.4   | 38         | Underweight | 863 |          |
| 54.9  | 466        | Normal |          |                       |          |
| 22.4  | 193        | Overweight |          |                       |          |
| 19.2  | 166        | Obese |          |                       |          |
| 39.0  | 337        | Yes |          | 864 | Was working during curfew |
| 61.0  | 527        | No |          |                       |          |
| 20.4  | 176        | No effect | 865 |          |
| 77.9  | 674        | Became less |          |                       |          |
| 1.7   | 15         | Became more |          |                       |          |
| 2.3   | 20         | Diabetes mellitus | 866 |          |
| 4.6   | 40         | Hypertension | 868 |          |
| 9.4   | 81         | Thyroid disease | 862 |          |
| 1.5   | 13         | Heart disease | 866 |          |
| 12.3  | 105        | Bronchial asthma | 856 |          |
| 1.6   | 14         | Renal disease | 863 |          |
| 1.8   | 16         | Epilepsy | 866 |          |
| 5.9   | 51         | Myself | 865 |          |
| 6.5   | 56         | Husband, son, daughter|     |          |
| 12.6  | 109        | My family |          |                       |          |
| 12.8  | 111        | My husband’s family |          |                       |          |

Women’s characteristics

The mean age (SD) was 28.9 (±1.9) years. The mean (SD) for body mass index (BMI) was 25.7 (±4.7) kg/m². The results showed that 51 women (5.6%) had COVID-19. Table 3 summarizes the women’s characteristics.

Current obstetric data and barriers to seeking antenatal care

The mean (SD) for the number of previous pregnancies was 2.3 (±1.4), and the mean (SD) for the number of previous deliveries was 1.1 (±1.4). Regarding pregnancies during the curfew, 95.1% of the women had a singleton pregnancy. Furthermore, 21.1% had no ANC consultations, and 26% reported that the longest time without an ANC consultation was more than two months. Additionally, 7.3% of the women had a miscarriage, and 27.9% delivered during the curfew. Table 4 shows the various obstetric details including methods of ANC consultations and barriers.

Nutrition, exercise, and smoking

Table 5 summarizes the changes in the dietary patterns, supplement intake, smoking, and exercise during the curfew. Data analysis showed a statistically significant increase in the number of meals during the curfew (Chi square = 82.167, df = 1, P < 0.001). Regarding the changes in dietary patterns, more food quantities were consumed with a change toward healthier eating to boost immunity. Regarding supplement intake, the results showed that during the curfew 56.1% of the women reported that their supplement intake changed, either increased or decreased. The most common reasons for the changes were related to boosting immunity, limited resources, or poor compliance. The results showed that 5.6% of the
women started smoking, and 44.9% reported having less sport activity.

Psychosocial variables

Data analysis showed that 93.3% of respondents reported that they had psychological stress. The most common reasons for stress were fear of catching the infection and changes in lifestyle in 93% and 85.5%, respectively. Additionally, the most common coping mechanisms were sleeping more, smoking, and eating, in over 75% of the respondents.

Regarding domestic violence, 29.9% of the respondents reported that they had experienced at least one form of domestic violence, with verbal violence being the most common form. Regarding telephone usage during the curfew, data analysis showed a statistically significant increase in the duration of usage compared to before the curfew (Chi square = 153.141, df = 1, P = 0.000). In addition, there was a statistically significant increase in the number of hours of television (TV) watching during the curfew compared to before (Chi-square = 82.167, df = 1, P = 0.000).

The score of the psychological stress, as measured on NAS, was low in 40.1% of the respondents and high in 59.9%. Table 6 shows the psychosocial variables.

Table 7 summarizes the factors in the four domains that have statistically significant correlations with the level of psychological stress during the curfew. The results showed that older age, lower educational achievement, low family income, and the presence of a family member infected with COVID-19 were associated with higher psychological stress levels. Furthermore, higher psychological stress levels were reported by women whose ANC facilities were far from home, who had no ANC consultations for more than two months, did not have laboratory tests or obstetric ultrasound scans, who had more difficulties reaching ANC facilities, and who had pregnancy complications.

Regarding nutrition, supplements, smoking and sports domain, the psychological stress levels were more in women who had more frequent daily meals and women who started to smoke during the curfew (All Ps were < 0.05).

In the psychosocial domain, the results showed that higher psychological stress scores were reported by women who had financial difficulties, had worries from catching the infection, had wor-
ries from changes in lifestyle, had marital and family problems, and were victims of domestic violence (All Ps were < 0.05).

**Discussion**

The results showed different response rates to the various study domains. This probably is related to both the questionnaire being lengthy and containing several domains (Rolstad et al., 2011). We acknowledge that our questionnaire was both lengthy and contained many domains.

**Obstetric domain**

Our results showed that the curfew led to a reduction in the number of ANC consultations and a longer duration between consultations. These reductions were independent of the women’s age, gestational age, level of education, or place of residence. A similar pattern was reported in another study (Muhaidat et al., 2020). Furthermore, the most common barriers for seeking ANC were ANC facilities being closed, travel restrictions, concerns about catching the infection, and financial difficulties. This reflects the large-scale negative effects of the COVID-19 curfew on pregnant women regardless of their characteristics. Therefore, during large-scale emergencies, pregnant women need more attention to minimize the risk of adverse effects on both mothers and babies because such emergencies are associated with increased maternal and perinatal morbidities and mortalities (Brennan and Nandy, 2001; Fryer et al., 2020). Furthermore, considering the travel restrictions and the ANC facilities being closed, our results showed that over two-thirds of the women who responded used various alternative methods for ANC consultations such as online consultations via social media platforms or telephone consultations. This pattern was encouraged in various recommendations to reduce face-to-face contact between pregnant women and healthcare providers to reduce the risks of spreading the COVID-19 infection (Chen et al., 2020; Favre et al., 2020). While such methods do not reflect optimal ANC because necessary investigations and obstetric ultrasound scans cannot be performed online, they may be integrated in the ANC pathway in similar large scale future emergencies.

| Table 5 | Nutrition, supplements, exercise, and smoking. |
|----------|-----------------------------------------------|
| Variable | Category                                      |
| Valid Percentage | No.    | Responses | Number of meals before lockdown |
| 5.5       | 48     | One meal  | 867                                  |
| 63.5      | 550    | Two meals |                                       |
| 31.0      | 269    | Three meals or more |                               |
| 8.8       | 76     | One meal  | 863                                  |
| 73.7      | 636    | Two to three meals |                               |
| 17.5      | 151    | Four meals or more |                               |
| Change in eating pattern | 59.7 | Yes | 626                                  |
|           | 57.8   | Yes       | 606                                  |
|           | 26.5   | Yes       | 514                                  |
|           | 29.8   | Yes       | 504                                  |
|           | 86.0   | Yes       | 673                                  |
|           | 46.0   | Yes       | 524                                  |
|           | 53.7   | Yes       | 523                                  |
| Supplement intake during lockdown | 93.9 | Yes | 798                                  |
|           | 85.6   | Yes       | 688                                  |
|           | 82.9   | Yes       | 614                                  |
|           | 74.8   | Yes       | 606                                  |
|           | 61.6   | Yes       | 502                                  |
|           | 76.8   | Yes       | 609                                  |
|           | 51.4   | Yes       | 484                                  |
|           | 56.1   | Yes       | 606                                  |
| Reasons for change in supplement intake | 47.9 | Yes | 520                                  |
|           | 35.3   | Yes       | 507                                  |
|           | 33.3   | Yes       | 480                                  |
|           | 27.1   | Yes       | 465                                  |
| Smoking   | 27.9   | Yes       | 853                                  |
|           | 6.5    | Yes       | 850                                  |
| Sport     | 23.3   | Yes       | 838                                  |
|           | 46.5   | No change |                                       |
|           | 50.3   | Less sport |                                       |
|           | 3.2    | More sport |                                       |

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The caesarean section (CS) rate in our cohort did not change compared to the rate before the curfew. The rate in our study was in keeping with the published rate of nearly 40% in Jordan before the curfew (Handallah, 2018). While our findings of a stable CS rate were supported by a report from the United States (Malhotra et al., 2020), a study from China showed an increase in the rate of CS (Zhang et al., 2020) during the pandemic. Possible explanations for the different patterns in CS rates in various studies may be related to study populations, obstetric complications, and sample sizes. We acknowledge that we have not studied the impact of catching the infection on CS rate as it was not an aim of our study.

**Food, supplements, exercise, and smoking**

The results showed that dietary habits changed during the curfew. The majority of the respondents reported changes in meal timings, numbers, and food quantities. In addition, there was a trend toward healthier eating. A study from Denmark showed similar results where respondents ate more food quantities and had more meals (Giacalone et al., 2020). This is probably due to women spending more time at home. Regarding supplements, the results showed a change in the pattern of supplements intake during the curfew. Approximately half of the respondents reported an increase in supplements intake to boost their immunity, and one-third reported a decrease due to financial reasons and poor compliance. While public worries from infections and their consequences may encourage people to seek a healthier lifestyle, people may seek comfort in food to overcome the stress of the curfew.

Physical exercise was affected by the curfew. Over half of the respondents reported less exercise for various reasons. Another report showed that most people adopted a lifestyle with less physical activity and exercise (Lim and Pranata, 2021). In addition, the results of our study showed that while two-thirds of smokers had no change in their smoking patterns, 5.6% of the respondents started smoking during the curfew. Another study from England showed that while the curfew was not associated with a significant change in smoking, it was associated with increases in smoking cessation (Jackson et al., 2021). Furthermore, women who started smoking during the curfew may have experienced more stress and probably started smoking as a coping mechanism.

**Psychosocial domain**

Our results showed that the curfew had a significant negative impact on the psychological wellbeing of pregnant women. A study from Italy which included pregnant women showed that the COVID-19 outbreak had moderate to severe psychological effects, particularly, a higher degrees of anxiety (Saccone et al., 2020). Similar findings were reported in a study from Canada, where three-

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**Table 6**

Psychosocial variables (NAS: numeric analogue scale).

| Variable | Category | Stress level | High psychological stress level |
|----------|----------|--------------|---------------------------------|
| Age groups | 18–24 | N (%) | N (%) | X² | P-value |
|          | 25–34 | 231 (32.5) | 335 (67.5) | 6.57 | 0.037 |
|          | 231 (40.8) | 335 (59.2) | 6.57 | 0.037 |
Table 7

| Variable                                | Category | N (%) | N (%) |
|-----------------------------------------|----------|-------|-------|
| Age groups                              | 18–24    | 231 (32.5) | 335 (67.5) | 6.57 | 0.037 |
|                                        | 25–34    | 231 (40.8) | 335 (59.2) |
|                                        | 35–45    | 58 (47.2)  | 65 (52.8)  |
| Education groups                        | High school or < | 90 (33.5)  | 179 (66.5) | 8.48 | 0.014 |
|                                        | Diploma  | 43 (37.7)  | 71 (62.3)  |
|                                        | University | 206 (44.2) | 260 (55.8) |
| Pandemic effect on family income        | No effect | 102 (59.3) | 70 (40.7)  | 34.02 | <0.001 |
|                                        | Becomes < | 230 (34.8) | 430 (65.2) |
|                                        | Becomes > | 6 (40.0)  | 9 (60.0)   |
| Family member had                       | COVID-19 | Yes | 32 (29.4) | 77 (70.6) | 5.68 | 0.01 |
|                                        | No       | 305 (41.3) | 433 (58.7) |
| Place of ANC close to home              | Yes      | 196 (45.3) | 237 (54.7) | 11.95 | <0.001 |
|                                        | No       | 125 (33.3) | 250 (66.7) |
| Number of antenatal care visits         | 0        | 14 (30.4)  | 32 (69.6)  | 9.82 | 0.044 |
|                                        | 1        | 37 (44.0)  | 47 (56.0)  |
|                                        | 2        | 38 (36.5)  | 66 (63.5)  |
|                                        | 3        | 53 (31.9)  | 113 (68.1) |
|                                        | 4 or more| 180 (43.8) | 231 (56.2) |
| Longest time without antenatal care     | < 1 month| 79 (45.9)  | 93 (54.1)  | 9.31 | 0.01 |
|                                        | 1–2 months| 168 (40.7) | 245 (59.3) |
|                                        | >2 months| 63 (31.0)  | 140 (69.0) |
| Had regular laboratory and ultrasound scan tests | Yes | 205 (45.5) | 246 (54.5) | 42.22 | <0.001 |
|                                        | No       | 127 (34.0) | 246 (66.0) |
| How often did you have difficulties reaching antenatal care place? | Never | 141 (56.0) | 111 (44.0) | 42.21 | <0.001 |
|                                        | Sometimes | 121 (36.1) | 214 (63.9) |
|                                        | Often    | 39 (30.5)  | 89 (69.5)  |
|                                        | Always   | 24 (25.3)  | 71 (74.7)  |
| Did you have pregnancy complications?   | Yes      | 246 (44.0) | 313 (56.0) | 5.51 | 0.012 |
|                                        | No       | 34 (31.8)  | 73 (68.2)  |
| Did you have difficulties reaching the delivery place? | Yes | 14 (0.177) | 65 (82.8) | 21.18 | <0.001 |
|                                        | No       | 110 (0.47) | 124 (53.5) |
| Psychological stress:Financial          | Yes      | 163 (30.4) | 374 (69.6) | 38.70 | <0.001 |
|                                        | No       | 75 (60.0)  | 50 (40.0)  |
| Psychological stress: Fear of catching COVID-19 | Yes | 214 (35.2) | 394 (64.8) | 11.07 | <0.001 |
|                                        | No       | 27 (60.0)  | 18 (40.0)  |
| Psychological stress: Change in lifestyle | Yes | 188 (35.7) | 339 (64.3) | 10.44 | <0.001 |
|                                        | No       | 45 (54.2)  | 38 (45.5)  |
| Psychological stress: Marital problems  | Yes      | 71 (24.4)  | 220 (75.6) | 33.61 | <0.001 |
|                                        | No       | 114 (48.7) | 120 (51.3) |
| Psychological stress: Family problems   | Yes      | 66 (25.1)  | 197 (74.9) | 26.62 | <0.001 |
|                                        | No       | 114 (47.1) | 128 (52.9) |
| Domestic violence from husband / family | Yes | 15 (15.8)  | 80 (84.2)  | 27.10 | <0.001 |
|                                        | No       | 317 (43.7) | 409 (56.3) |
| Number of meals during lockdown         | 1 meal   | 16 (21.6)  | 58 (78.4)  | 21.04 | <0.001 |
|                                        | 2 meals  | 118 (38.2) | 191 (61.8) |
|                                        | 3 meals  | 152 (48.3) | 163 (51.7) |
|                                        | 4 meals  | 39 (39.0)  | 61 (61.0)  |
|                                        | Five or >| 15 (31.9)  | 32 (68.1)  |
| Start smoking during lockdown           | Yes      | 14 (25.5)  | 41 (74.5)  | 5.50 | 0.012 |
|                                        | No       | 323 (41.5) | 455 (58.5) |
| Changes in smoking pattern             | No change| 139 (42.6) | 187 (57.4) | 13.66 | <0.001 |
|                                        | Less smoking | 32 (26.7)  | 88 (73.3)  |
|                                        | More smoking | 15 (25.0)  | 45 (75.0)  |
| Changes in sport during lockdown        | No change| 169 (47.2) | 189 (52.8) | 20.65 | <0.001 |
|                                        | Less sport| 125 (32.1) | 265 (67.9) |
the findings that pregnant women are more likely to be victims of domestic violence (Dahlen et al., 2018). The results of our study showed a significant increase in the daily mobile telephone usage and TV watching (Chae, 2020). showed a significant increase in mobile telephone usage during the COVID-19 curfew compared to before. In addition, according to the Regulator for the Communications Services in the UK (Anon, 2021b), people spent 40% of their time watching TV during the curfew. Such changes in telephone usage and TV watching are probably related to people's need to receive updates on the pandemic, to learn, study, or work online, for entertainment, and to cope with the stress associated with the curfew.

Limitations

We acknowledge the limitations of our study. The sample size was small. Psychological stress was not measured by a validated instrument administrated face to face by a trained specialist. Furthermore, the survey was available for women who have access to social media platforms; therefore, women with limited resources and women who do not have access to the internet may not have had a chance to participate.

Conclusion

The COVID-19 pandemic curfew, which was applied by the Jordanian authorities, resulted in a negative impact on the psychosocial lives of pregnant women. As a result, pregnant women did not receive optimal antenatal care. Additionally, they experienced higher degrees of psychological stress and domestic violence. The findings of our study should encourage national health policymakers to ensure the provision of adequate health care and support for pregnant women and to consider the health and psychosocial impact of national emergencies on pregnant women.

Declaration of Competing Interest

No competing interests.

CRediT authorship contribution statement

Suhair Qudsieh: Conceptualization, Methodology, Supervision, Data curation, Writing – review & editing. Ismaiel Abu Mahfouz: Data curation, Formal analysis, Visualization, Writing – original draft. Hana Qudsieh: Writing – review & editing, Data curation, Investigation. Lara Al Barbarawi: Software, Writing – review & editing. Fida Asali: Formal analysis, Validation. Mohammad Al-Zubi: Data curation, Resources. Ala‘ Al Barbarawi: Visualization, Data curation, Resources.

Ethical approval

The study was approved by the institutional review Board of Yarmouk University. The approval number is 1/136/2020.

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