**Title Page**

**The Impact of Postpartum Depression on Quality of Life among Mothers in the First Year After Childbirth: Ethnic Differences**

Short title:

**Postpartum Depression's Impact on Maternal Quality of Life**

Journal

**Social Science & Medicine**

Samira Alfayumi-Zeadna 1\*, Lena Gnaim-Abu Touma 2, Maya Weinreich 3 and Julie Cwikel 4

1 Nursing Department, School of Health Sciences, Ashkelon Academic College, Ashkelon 78211, Israel; [samira.fayumi@gmail.com](mailto:samira.fayumi@gmail.com)

2 Department of Education, Al-Qasemi Academic College of Education, Baqa-El-Gharbia, Israel, 3010000, P.O.Box 124.; [lenagnaim2@gmail.com](mailto:lenagnaim2@gmail.com)

3 Medical School for International Health, Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer Sheva 84105, Israel; [weinreic@post.bgu.ac.il](mailto:weinreic@post.bgu.ac.il)

4 Center for Women’s Health Studies and Promotion, Ben-Gurion University of the Negev, Beer Sheva 84105, Israel; [jcwikel@bgu.ac.il](mailto:jcwikel@bgu.ac.il)

**\*** Correspondence: samira.fayumi@gmail.com; Tel.: +972-509001147

**Declarations:**

**Manuscript type:** Original research paper

**Conflict of interest statement:** The Authors declare there to be no conflict of interest.

**Ethical statement:** This study was approved by the Ethics Committee of Ashkelon **Academic College** (-------). Electronic informed consent was obtained from all participants, and confidentiality related to all information provided has been ensured.

**Data availability statement:** The data supporting the findings of this study are available from the corresponding author upon reasonable request.

**Source of Funding:** This study received no funding.

**Author Contributions:** Conceptualization, S.A.-Z. and L.G.A-T; methodology, S.A.-Z.,L.G.A-T and J.C.; submission to Helsinki Committee, S.A.-Z., and L.G.A-T; data duration, S.A.-Z., and L.G.A-T; formal analysis, S.A.-Z. and L.G.A-T; writing—original draft preparation, S.A.-Z., L.G.A-T, J.C. and M.W.; writing-review and editingS.A.-Z., L.G.A-T., M.W.and J.C.; project administration, S.A.-Z. and L.G.A-T. All co-authors have read and agreed to the published version of the manuscript.

**Acknowledgments:** We wish to thank our colleagues who have collaborated with us and all the mothers who participated in the study.

**Abstract**

**Background:** Postpartum depression (PPD) is a complex condition appearing during pregnancy and after childbirth that can have negative outcomes for mothers, children, and their families and may affect the quality of life (QoL(. This study examined the impact of PPD on the QoL among mothers in the first year postpartum.

**Methods:** A total of 601 women (478 Jewish and 123 Arab women), aged 18­–47 years and up to 12 months postpartum, participated in this cross-sectional study. Data were collected by two online self-report questionnaires: the Edinburgh Postnatal Depression Scale (EPDS) and the World Health Organization Quality of Life Assessment-BREF (WHOQOL-BREF), which measure PPD and QoL, respectively. Women with EPDS scores ≥ 13 were considered to be showing PPD symptoms, and those with QoL scores < 87 were considered to have a low QoL.

**Results:** Theprevalence of clinical PPD symptoms in the entire study population was 23.8%. PPD prevalence varied by ethnicity and was 21% among Jewish and 33% among Arab mothers. The impact of PPD on QoL dimensions indicated significant differences in physical health, mental health, and social relationships, with Jewish mothers generally faring better across these dimensions than Arab mothers, particularly among those with EPDS ≥ 13. Logistic regression models showed that mothers with PPD were 8.7 times more likely to have low QoL than mothers without PPD symptoms. Additionally, Arab mothers were 1.62 times more likely to have lower QoL, and unemployed mothers and those with obstetric complications were about twice as likely to report lower QoL. All other independent variables tested in the adjusted model had no significant effects on QoL.

**Conclusion:** These findings highlight the importance of early screening, diagnosis, and effective treatment of PPD to improve the overall QoL of mothers in the first year postpartum. The significant ethnic disparities observed underscore the need for culturally tailored interventions to address the unique challenges of different ethnic groups. Future research should develop targeted support strategies addressing both psychological and socioeconomic determinants of QoL in vulnerable groups and aim to mitigate the adverse effects of PPD on mothers and their families.

**Keywords:** Edinburgh Postnatal Depression Scale (EPDS), Ethnicity, Israel,mothers, Postpartum Depression, Quality of Life, World Health Organization Quality of Life Assessment-BREF (WHOQOL-BREF).

**Introduction**

Postpartum depression (PPD) is a complex maternal mental health condition that occurs within four weeks of delivery and has a similar presentation to major depressive disorder (O’Hara & McCabe, 2013). Symptoms of PPD include depressed mood, loss of energy, changes in appetite and sleep, diminished concentration, uncontrollable crying, feelings of worthlessness or guilt, and, in severe cases, thoughts of harming oneself or the baby (Brummelte & Galea, 2016; Lee et al., 2022; O’Hara & McCabe, 2013). PPD is often associated with increased levels of anxiety (Alfayumi-Zeadna et al., 2022).

Risk factors for PPD include a history of depression or anxiety, inadequate social support, stressful life events, poor economic status, low education, domestic violence, unplanned pregnancy, history of miscarriages, and poor infant health (Sainuddin et al., 2023; Daoud et al., 2019). PPD has significant adverse effects on maternal mental health, maternal mortality, attachment, neonatal health, early-life development, and quality of life (Brummelte & Galea, 2016; Mousavi & Shojaei, 2021; Slomian et al., 2019).

Quality of Life (QoL) is defined as subjective well-being and relates to an evaluation of how people feel and think about their lives (*add ref*). During the postpartum period, QoL is influenced by various factors, including physical health, psychological well-being, social relationships, and overall life satisfaction. Low socioeconomic status (SES), low education level, partner violence, and obstetric complications can increase stress and anxiety and contribute to the development of PPD and reduced QoL during the postpartum period (Liu et al., 2021; Mthembu et al., 2021). Additionally, unemployment and financial strain can elevate stress levels and increase the risk of depressive symptoms (Mthembu et al., 2021).

Previous studies investigating the relationship between PPD and QoL found that PPD invariably compromises QoL across all domains. For example, a study conducted in Canada found that women presenting with depressive symptomology scored significantly lower on all domains of the Medical Outcomes Study Questionnaire (SF-36) than women without depressive symptoms (Da Costa et al., 2006). A study conducted in France also found that PPD negatively affected all domains of QoL measured by the SF-36 questionnaire (De Tychey et al., 2008). A systemic review of the literature and meta-analysis determined that health-related QoL is significantly lower in pregnant and postpartum mothers with perinatal depression than in those without depression (Li et al., 2022).

The global prevalence of PPD is 10%–20%, although rates vary across different populations (Bauman et al., 2020; O’Hara & McCabe, 2013; Shorey et al., 2018; Slomian et al., 2019). Most studies have determined PPD prevalence rates in Western countries, mainly in the United States, where one out of every eight postpartum women is diagnosed with PPD (*add ref*). Several studies from Middle Eastern countries show that the risk factors, prevalence, and outcomes of QoL associated with PPD vary considerably from those observed in Western countries. A PPD prevalence rate of 5.6% was reported in Iran (Mousavi & Shojaei, 2021), whereas in Saudi Arabia, it was close to 60% (Almuqbil et al., 2022). The great variability in regional PPD prevalence indicates that locally collected data that represents all ethnic groups is necessary for understanding societal needs and developing appropriate interventions.

Israel is a multicultural nation of approximately 9.3 million people (Central Bureau of Statistics, 2023), with a majority Jewish population (74%) and a minority Arab population (21%). The national prevalence of PPD, determined in 2019, was 10.3% (Shwartz et al.). Other studies of PPD prevalence in Israel have found that it varied greatly between the two ethnicities—ranging from 16.3% to 43% among the Arab population and from 4.5% to 22.6% among the Jewish population (Alfayumi-Zeadna et al., 2015; Glasser et al., 2012). A study of 853 Jewish and 275 Arab mothers found that Arab women were approximately twice more likely to experience PPD than Jewish women (20% versus 7%, respectively) (Shwartz et al., 2019). This significant disparity in the prevalence of PPD indicates that mothers’ QoL during the postpartum period may also be affected by ethnicity, and further investigations are required to test this hypothesis.

To our knowledge, the current study is the first to examine the QoL of mothers with and without clinical symptoms of PPD in the Middle East and among different ethnic groups in Israel. By evaluating the specific dimensions of QoL influenced by PPD within this distinct cultural context, our research aims to examine the impact of PPD on the QoL of mothers in the first year after childbirth. Furthermore, with a nuanced understanding of the association between PPD and QoL, this study seeks to contribute valuable insights that could inform and improve maternal healthcare interventions, tailoring them more effectively to meet the needs of perinatal women.

**Methods**

***Study Design and*** ***Participants***

This cross-sectional study included women within 12 months from childbirth. Data were collected between February and September 2023. Inclusion criteria were (1) Eighteen years of age or older, (2) A biological mother of a child 1–12 months old, (3) Hebrew or Arabic speaking, and able to provide informed consent. Only women who completed the Edinburgh Postnatal Depression Scale (EPDS) were included. Data from 601 participants were considered valid.

***Sample Size***

Prior to enrollment, a representative sample size was calculated according to the previous year’s number of Israeli newborns. Thus, based on an α-level of 0.05, we estimated a minimum sample size of 300 participants.

***Study Procedures and Data Collection***

Data for the current study was collected through online, structured, self-report questionnaires. Participants were recruited through social media (i.e., Facebook, Instagram, and WhatsApp) and through the personal networks of colleagues and acquaintances of research team members. Participants were asked to follow the project’s website link and were then directed to the online questionnaire that was available in Hebrew and Arabic. Once there, they were asked to confirm the eligibility criteria regarding their age and pregnancy or postpartum status. Next, they were asked to read an electronic consent form presenting an overview of the study aims, the content of the questions asked, potential risks and benefits, and ethical aspects of the study. They then signed their consent to participate in the study. Finally, those who consented and signed the online informed consent form and met the predefined inclusion criteria filled out the questionnaires. The questionnaires took approximately 15 minutes to complete.

***Study Variables and Measures***

***Dependent Variable (Outcome measure):***

The World Health Organization Quality of Life Assessment-BREF (WHOQOL-BREF) is a concise 26-item version of the original WHOQOL-100, designed to evaluate QoL in various contexts using a 5-point Likert scale response set (THE WHOQOL GROUP, 1998). The WHOQOL-BREF assesses health-related QoL across four domains: physical health, social relationships, environment, and psychological well-being (THE WHOQOL GROUP, 1998). In the current study, we included three domains: physical health (seven items), psychological health (six items), and social relationships (three items). Validated Hebrew (WHO, 2020a) and Arabic (WHO, 2020b) translated versions of the WHOQOL-BREF were used. We analyzed the WHOQOL-BREF total score as a continuous variable ranging from 26 to 130, with a higher score indicating a better QoL. Additionally, we defined the categorical variables ‘lower QoL’ and ‘higher QoL,’ using the mean of the WHOQOL-BREF score in the entire study population (87) as the cut-off point. ,

***Independent variables***

***Postpartum depression***

Postpartum depression (PPD) was measured by the Edinburgh Postnatal Depression Scale (EPDS) (Cox et al., 1987), the most widely used self-report scale designed to identify clinical PPD symptoms (Cox, 2019). This 10-item scale assesses symptoms of sadness, anxiety, and suicidal thoughts that women had felt throughout the previous week. Scores range from 0 to 30, with the depression level defined as the sum score of all items and higher scores indicate greater symptom severity. Women who score ≥ 13 are considered at risk for PPD (Levis et al., 2020; Gibson et al., 2009); thus, this cut-off score was chosen for the current study. The reliability was tested by Cronbach’s alpha and was 0.870 for the entire study, 0.880 for Jewish women, and 0.802 for Arab women.

***Sociodemographic Characteristics***

Sociodemographic information included ethnicity (Jewish or Arab), *region* ( south, center, or north of the country), *area of living* (urban or rural), age, family status (married or other), educational level (less than high school education or above high school, or academic degree), *occupational status* (employed or unemployed), *family income* (relative family income was reported as (well) above or (far) below the Israeli average of ₪21,616 per month (approx. 5842 $/month USD)), number of children (one child or ≥ 2 children), gestational age, and baby’s age at time of responding to the questionnaire.

***Physical Health Variables***

*Miscarriages:* Women were asked, "How many miscarriages have you had in the past?" The World Health Organization (WHO, 1977) defines a miscarriage as the premature loss of a fetus up to 23 weeks of pregnancy and weighing up to 500 grams. *Obstetric complications* (no/yes) and *chronic disease* (no/yes).

***Statistical Methods***

Statistical analyses were performed using SPSS software version 28. Bivariate analysis was performed to examine associations between the independent variables and PPD using the Chi-square test and calculating odds ratios (OR) for categorical variables. Student’s t-test was used to compare continuous variables. Multivariate logistic regression analyses were performed to identify risk factors for lower QoL. All independent variables associated (p < 0.05) with PPD in the bivariate analyses were included in the multivariate analysis. We used two models: an unadjusted model and an adjusted model that calculates the OR while controlling for other variables, providing information about the effect of each variable on QoL. The OR and 95% confidence interval (95% CI) were computed.

### *Ethical Considerations*

Ethical approval was obtained from the Ashkelon Academic College Ethics Committee before the study commenced (08/2023). Electronic informed consent was obtained from all participants, and confidentiality related to all information provided has been ensured. Since the survey was distributed online, a debriefing procedure was made available; at the end of the survey, a list of up-to-date services and resources for postpartum emotional help was provided.

**Results**

Table 1 presents the sociodemographic characteristics of the total sample and the two subgroups, Jewish and Arab women. Significant differences were found between Jewish and Arab mothers in sociodemographic and obstetrical characteristics. Jewish mothers were older, more educated, more likely to live in urban areas, and had higher employment rates and family income. Jewish mothers reported more obstetric complications than Arab mothers.

**Table 1. Sociodemographic and Obstetrical Characteristics of Arab and Jewish Participants**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Characteristics** | **Total N = 601 (100%)**  **No. (%) /**  **Mean (SD), Range** | **Jewish Women**  **N = 478 (79.5%)** | **Arab Women**  **N = 123 (20.5%)** | **P value** |
| **Sociodemographic characteristics** | | | | |
| **Age of mothers (years)** | 30 (5.20) 18–47 | 30.4 (5.2), 19–47 | 27.6 (4.8), 18–41 | < 0.001 |
| 18-29 | 301 (50.1) | 215 (45.0) | 86 (69.9) |  |
| >=30 | 300 (49.9) | 263 (55.0) | 37 (30.1) |  |
| **Region** |  |  |  | < 0.001 |
| South | 232 (38.6) | 142 (29.7) | 90 (73.2) |  |
| Centre | 279 (46.4) | 269 (56.3) | 10 (8.1) |  |
| North | 90 (15.0) | 67 (14.0) | 23 (18.7) |  |
| **Area of living** |  |  |  | < 0.001 |
| Urban | 384 (63.9) | 351 (73.4) | 33 (8.6) |  |
| Rural | 217 (36.1) | 127 (26.6) | 90 (73.2) |  |
| **Family status** |  |  |  | 0.041 |
| Married | 569 (94.7) | 448 (93.7) | 121 (98.4) |  |
| Other (divorced, separated, widowed) | 32 (5.3) | 30 (6.3) | 2 (1.6) |  |
| **Number of children** | 2.4 (1.6), 1–13 | 2.3 (1.5), 1–13 | 2.9 (2.1), 1–10 | 0.399 |
| 1 | 200 (33.3) | 163 (34.1) | 37 (30.1 |  |
| ≥ 2 | 401 (66.7) | 315 (65.9) | 86 (69.9) |  |
| **Level of education** | 14.4 (3.1), 2–25 | 14.9 (2.6), 2–25 | 12.6 (3.9), 2–24 | < 0.001 |
| No academic education | 207 (34.4) | 146 (30.5) | 61 (49.6) |  |
| Academic degree | 392 (65.2) | 332 (69.5) | 62 (50.4) |  |
| **Employment status** |  |  |  | < 0.001 |
| Employed | 508 (84.5) | 438 (91.6) | 70 (56.9) |  |
| Unemployed | 93 (15.5) | 40 (8.4) | 53 (43.1) |  |
| **Family Income** |  |  |  | 0.007 |
| ≥ National average (≥ ILS21,616( | 224 (37.3) | 191 (40.0) | 33 (26.8) |  |
| < national average (< ILS21,616) | 377 (62.7) | 287 (60.0) | 90 (73.2) |  |
| **Obstetrical characteristics** | | | | |
| **Gestational age** | 38(2) 26–42 |  |  | 0.396 |
| Preterm (≤ 36 weeks) | 52 (8.7) | 39 (8.2) | 13 (10.6) |  |
| Term (37–42 weeks) | 549 (91.3) | 439 (91.8) | 110 (89.4) |  |
| **Baby Age (months)** | 6.3(3.7) 1–12 |  |  | 0.004 |
| 1-6 | 313 (52.1) | 263 (55.0) | 50 (40.7) |  |
| 7-12 | 288 (47.9) | 215 (45.0) | 73 (59.3) |  |
| **Miscarriages** |  |  |  | 0.700 |
| No | 415 (69.7) | 335 (70.1) | 84 (68.8) |  |
| Yes | 182 (30.3) | 143 (29.9) | 39 (31.7) |  |
| **Obstetric complications** |  |  |  | < 0.001 |
| No | 494 (82.20( | 375 (78.5) | 119 (97.5) |  |
| Yes | 106 (17.6) | 103 (21.5) | 3 (2.8) |  |

The likelihood of experiencing PPD or lower QoL was compared between Arab and Jewish women (Table 2). We found that Arab mothers were more likely to present PPD symptoms (OR =1.843) and more likely to report lower QoL (OR=1.736) than Jewish mothers.

**Table 2. The prevalence of Clinical PPD symptoms and QoL in the total study sample and among Jewish and Arab women, and the association between each of these variables and ethnicity**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Characteristics** | **Total N = 601 (100%)** | **Jewish Women**  **N = 478 (79.5%)** | **Arab Women**  **N = 123 (20.5%)** | **OR** | **P value** |
| Mean (SD), Range  **No. (%)** | Mean (SD), Range  **No. (%)** | Mean (SD), Range  **No. (%)** |
| **PPD score** | 8.5 (5.7), 0–30 | 8.1 (5.7), 0–30 | 9.7 (5.4), 0–25 | 1.843 | 0.005 |
| No (EPDS < 13) | 458 ( 76.2) | 376 (78.7) | 82 (66.7) |  |  |
| Yes (EPDS ≥ 13) | 143 (23.8) | 102 (21.3) | 41 (33.3) |  |  |
| **QoL score** | 93 (17.9), 33–130 | 95 (16.0), 41–130 | 87 (22), 33–130 | 1.736 | 0.006 |
| High (QoL = 30 - 93) | 329 (56.4) | 283 (59.2) | 56 (45.5) |  |  |
| Low (QoL = 94 - 130) | 272 (43.6) | 195 (40.8) | 67 (54.5) |  |  |

Table 3 presents data on the impact of PPD on various dimensions of QoL. The dimensions were divided into three categories: physical health, mental health, and social relationships. For all categories and individual dimensions, the differences observed were statistically significant.

Mothers with PPD reported higher levels of bodily pain, needed more medical treatment, had less energy, reduced mobility, poorer sleep and rest, difficulty in performing daily living activities, and reduced work capacity. The total physical health score was lower in those with PPD. In the mental health category, mothers with PPD enjoyed life less, felt their lives were less meaningful, had poorer concentration, worse body image, were less satisfied with themselves, and experienced more negative feelings. The total mental health score was also lower in those with PPD. In the category of social relationships, mothers with PPD reported poorer personal relationships, less satisfaction with their sexual lives, and less social support. The total score for social relationships was similarly lower in those with PPD.

Jewish and Arab mothers show significant differences in physical health, mental health, and social relationships when stratified by EPDS scores. Jewish women generally reported higher scores in these dimensions compared to Arab women, indicating better physical health, mental well-being, and social relationships. This difference is more pronounced in mothers with EPDS ≥ 13, where both groups show a decline, but Arab women exhibit a steeper decline.

**Table 3. Scores of QoL Dimensions among Jewish and Arab Women According to Clinical PPD symptoms (N = 601)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Dimensions** | **Jewish women** | | | **Arab women** | | |
|  | **Postpartum Depression, No. (%)** | | | | | |
|  | EPDS < 13  **376 (%)** | EPDS ≥13  **102 (%)** | **P-Value** | EPDS < 13  **82 (66.7)** | EPDS ≥13  **41 (33.3%)** | **P-Value** |
| **Physical Health** | | | | | | |
| Q3\_Low pain and discomfort **(R)** | 4.2 (0.9) | 3.6 (1.1) | < 0.001 | 3.7 (0.7) | 2.9 (0.8) | <0.001 |
| Q4\_Low medical treatment for daily functioning **(R)** | 4.6 (0.7) | 4.2 (1.0) | < 0.001 | 4.0 (1.2) | 3.3 (1.1) | 0.002 |
| Q10\_ Energy | 4.0 (0.9) | 3.1 (0.9) | < 0.001 | 3.6 (1.0) | 2.7 (1.0) | < 0.001 |
| Q15\_ Mobility | 4.1 (0.9) | 3.5 (1.1) | < 0.001 | 3.3 (1.2) | 2.7 (1.1) | 0.004 |
| Q16\_ Sleep and rest | 3.2 (1.0) | 2.2 (1.0) | < 0.001 | 3.2 (1.1) | 2.3 (0.9) | < 0.001 |
| Q17\_ Ability to perform activities of daily living | 3.7 (0.9) | 2.8 (0.9) | < 0.001 | 3.5 (1.0) | 2.5 (1.0) | < 0.001 |
| Q18\_Work Capacity (physical functioning) | 3.7 (1.0) | 2.7 (1.0) | < 0.001 | 3.5 (1.1) | 2.5 (0.9) | < 0.001 |
| **Total physical health** | 24.3 (3.5) | 20.1 (4.1) | < 0.001 | 21.8 (4.6) | 16.9 (4.0) | < 0.001 |
| **Mental health** | | | | | | |
| Q5\_ How much do you enjoy life? (Positive feeling) Suggest: Enjoy life | 4.0 (0.8) | 3.1 (0.8) | < 0.001 | 3.6 (1.1) | 2.6 (1.1) | < 0.001 |
| Q6\_ Life is meaningful | 4.1 (0.9) | 3.3 (1.1) | < 0.001 | 3.9 (1.1) | 2.9 (1.0) | < 0.001 |
| Q7\_ Able to concentrate | 3.8 (0.8) | 3.0 (0.9) | < 0.001 | 3.6 (1.0) | 2.7 (1.0) | < 0.001 |
| Q11\_Bodily image and appearance | 3.5 (1.0) | 2.7 (1.2) | < 0.001 | 3.9 (1.1) | 2.9 (1.1) | < 0.001 |
| Q19\_Satisfied with myself | 3.7 (0.9) | 2.7 (1.0) | < 0.001 | 3.9 (1.0) | 2.6 (1.0) | < 0.001 |
| Q26\_ Positive feelings (no despair, anxiety, depression) **(R)** | 4.0 (0.7) | 2.7 (0.8) | < 0.001 | 3.7 (0.8) | 2.8 (0.9) | < 0.001 |
| **Total mental health** | 23.0 (3.8) | 17.8 (4.1) | < 0.001 | 22.8 (4.9) | 16.9 (4.8) | < 0.001 |
| **Social relationships** | | | | | | |
| Q20\_Good personal relationships | 3.9 (1.0) | 2.9 (1.1) | < 0.001 | 3.8 (1.0) | 2.7 (1.1) | < 0.001 |
| Q21\_Satisfied with Sexual life | 3.4 (1.1) | 2.4 (1.1) | < 0.001 | 3.7 (1.0) | 2.6 (1.1) | < 0.001 |
| Q22\_Social support available | 3.7 (1.1) | 2.8 (1.2) | < 0.001 | 3.5 (1.2) | 2.5 (1.1) | < 0.001 |
| **Total social relationships** | 11.0 (2.7) | 8.2 (2.9) | < 0.001 | 11.2 (3.0) | 7.9 (3.1) | < 0.001 |

We used unadjusted and adjusted logistic regression models to predict the QoL from the PPD score and other categorical variables. Our findings indicate that PPD is the most significant factor affecting the QoL of postpartum mothers. Mothers with PPD (EPDS ≥ 13) were over eight times more likely to report a lower QoL. Additionally, Arab women were found to be 1.62 times more likely to have lower QoL. Although unemployment and obstetric complications significantly contributed to lower QoL, the relationship between PPD and QoL was nearly identical in the adjusted and unadjusted models.

**Table 4. Logistic Regression Models for Predicting Low QoL Score**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Unadjusted model** | | **Adjusted model** | |
| Variables | OR (95% CI) | **P-value** | **OR (95% CI)** | **P-value** |
| **Clinical PPD symptoms (EPDS < 13)** |  | < 0.001 |  | < 0.001 |
| No (EPDS < 13) | 1 |  | 1 |  |
| Yes (EPDS ≥13) | 8.68 (5.50 – 13.72) |  | 8.69 (5.48 – 13.97) |  |
| **Ethnicity (Jewish vs. Arab)** |  |  |  | 0.090 |
| Jewish |  |  | 1 |  |
| Arab |  |  | 1.62 (0.92 – 2.84) |  |
| **Age of mothers, y** |  |  |  | 0.284 |
| 18-29 |  |  | 1 |  |
| >=30 |  |  | 1.25 (0.84 – 1.85) |  |
| **Region** |  |  |  |  |
| South |  |  | 1 |  |
| Centre |  |  | 0.93 (0.52 – 1.67) | 0.821 |
| North |  |  | 1.34 (0.76 – 2.36) | 0.297 |
| **Area of living** |  |  |  | 0.322 |
| Urban |  |  | 1 |  |
| Rural |  |  | 1.24 (0.80 – 1.91) |  |
| **Family status** |  |  |  | 0.683 |
| Married |  |  | 1 |  |
| Other (divorced, separated, widowed) |  |  | 1.18 (0.51 – 2.73) |  |
| **Level of education** |  |  |  | 0.069 |
| Non-Academic degree |  |  | 1 |  |
| Academic degree |  |  | 0.68 (0.44 – 1.03) |  |
| **Employment status** |  |  |  | 0.050 |
| Yes |  |  | 1 |  |
| No |  |  | 1.80 (1.01– 3.15) |  |
| **Family Income** |  |  |  | 0.788 |
| ≥ National average ( 21,616( |  |  | 1 |  |
| < national average (< 21,616) |  |  | 1.06 (0.70 – 1.60) |  |
| **Baby Age** |  |  |  | 0.804 |
| 1-6 |  |  | 1 |  |
| 7-12 |  |  | 0.95 (0.66 – 1.38) |  |
| **Obstetric complications** |  |  |  | 0.031 |
| No |  |  | 1 |  |
| Yes |  |  | 1.72 (1.05 – 2.83) |  |

**Discussion**

QoL has emerged as an essential health component that broadens the traditionally narrow concerns focused on morbidity and life expectancy. The current study examined the association between the QoL and clinical symptoms of PPD (EPDS ≥ 13) in a sample of 601 postpartum mothers. The current study is the first to examine the QoL in mothers with and without clinical symptoms of PPD in Israel.

Our findings indicate that Arab mothers were more likely to experience PPD compared to Jewish mothers. We found that all QoL dimensions tested here varied significantly between women with and without PPD symptoms. Mothers with PPD reported higher pain levels, reduced energy, poorer sleep, and more difficulties in daily activities, with Jewish mothers generally faring better across these dimensions than Arab mothers, particularly among those with EPDS ≥ 13. Logistic regression models determined that PPD was the most significant factor affecting QoL, and mothers with PPD were approximately 8.7 times more likely to have lower QoL. Additionally, Arab mothers were 1.62 times more likely to have lower QoL, and unemployed mothers and those with obstetric complications were about twice as likely to report lower QoL, emphasizing the need for targeted interventions to support these groups. Our findings align with previous research that identified a strong association between PPD and reduced QoL in Western countries, including the United States (Darcy et al., 2011), France (De Tychey et al., 2008), and Canada (Da Costa et al., 2005), and in Middle Eastern countries, including Iraq (Muhammad et al., 2022), Iran (Sadat et al., 2014), and Saudi Arabia (Almuqbil et al., 2022 ). Zubaran & Foresti (2011) investigated a sample of 101 postpartum women in Brazil and reported a significant correlation between PPD and QoL. The authors disclosed that the study’s sample included mothers with poor educational backgrounds and those with lower SES. Likewise, Darcy et al. (2011) reported that mothers with PPD experienced notably lower QoL in the dimensions of physical and mental health. These mothers indicated higher levels of pain experienced by their infants and expressed increased health-related worries regarding their children. In addition, a recent study conducted in Saudi Arabia found that participants with PPD had significantly lower QoL in both mental and physical components, compared to those without PPD (Almuqbil et al., 2022).

Although our findings showed that Arab mothers in Israel reported significantly lower QoL compared to Jewish women (46.3% vs. 56.9%, respectively). Ethnicities appear to have a significant impact even when controlling for other variables and Arab women were found to be 1.62 times more likely to have lower QoL. Given the considerable differences in PPD rates in Israel between Arab and Jewish women, ranging from 16.3% to 43% among Arab mothers and 4.5% to 22.6% among Jewish mothers (Shwartz et al., 2019; Alfayumi-Zeadna et al., 2022; Alfayumi-Zeadna et al., 2015 ), the interplay among PPD rates, QoL and ethnicity needs additional examination. It is well acknowledged that differences in SES across racial groups are a significant contributor to racial disparities in health. However, race reflects multiple dimensions of social inequality. Further, individual and household indicators of SES capture relevant but limited aspects of this phenomenon. Researchers call for better SES measures in data sources but stress that improvements could be made by using existing information more thoughtfully and acknowledging its limitations (Williams et al., 2010; Braveman et al., 2005).

Employment status also affects the QoL of new mothers. Similar to previous studies from different countries, we found that unemployed mothers had lower QoL (Yang et al., 2016; Puciato et al., 2020). A study investigating 1240 newly diagnosed PPD mothers in Taiwan showed that PPD was positively correlated with unemployment and that a mother’s familial environment plays an important role in the development of PPD (Chang et al., 2016). Another study investigating 1,423 women in the United States reported that compared with women without significant PPD symptoms, women with PPD were more likely to be unemployed (Katon et al., 2014). In a longitudinal study, Chinweuba et al. (2018) found that employed women in Nigeria reported higher health-related QoL than unemployed women at three different time points, with the lowest mean QoL score at 18 weeks postpartum. The authors concluded that the traditionally accepted three months of paid maternity leave should be extended to help women balance their daily work with baby care. Additionally, the authors claimed that gender-sensitive employment opportunities in favor of women are necessary to empower more women economically.

Obstetric complications (pregnancy and childbirth complications) also emerged in our study as a factor that negatively affected postpartum mothers' QoL. Studies conducted among women in Israel indicated that 7% to 10.3% experienced pregnancy complications (Kessous et al., 2013; Shashar et al., 2020). A recent study assessing the long-term QoL after obstetric Intensive Care Unit admission reported similar results, showing that obstetric complications are associated with reductions in long-term physical and mental health QoL (Ramlakhan et al., 2023). Similar results have been reported in a study that measured health-related QoL and its contributing factors among postpartum women with preeclampsia. It showed that lower QoL was observed among postpartum women with preeclampsia, especially among those who experienced preterm birth or early neonatal death compared to women who were not diagnosed with hypertensive disorders during pregnancy (Jikamo et al., 2022). Additionally, a previous study by Prick et al. (2015), of 1391 postpartum mothers, showed that delivery by cesarean section, as opposed to vaginal delivery, had a profound and negative impact on physical QoL. This finding also emerged in other studies (Mahumud et al., 2019; Tola et al., 2021).

According to our study, factors that do not impact QoL are region and area of living, age of mothers, family status, number of children, education level, family income, gestational age, baby age, miscarriages, and chronic disease.

The current study fills a knowledge gap in understanding how PPD and other factors impact QoL in the two major ethnic groups in Israel. Our findings have practical implications for healthcare providers, policymakers, and support networks, such as the importance of early screening and intervention for PPD, not just from a mental health perspective but also for improving overall QoL for new mothers. Considering the diverse Israeli population, we advocate for culturally sensitive approaches to screening and treatment. There is a need to improve postpartum care practices, including integrating mental health evaluations with routine postpartum care and addressing the aspects of maternal well-being.

The study has several limitations. Reliance on self-reported symptoms to screen for PPD without clinical corroboration and the possibility of socially desirable responding (i.e., impression management) may have biased responses (i.e., underreporting of symptoms) (Rosenman et al., 2011). Clinical interviews by a psychiatrist or other licensed clinician would have enabled us to corroborate self-reported PPD responses. Additionally, the cross-sectional design limits the ability to establish causality (Spector, 2019). Future research should focus on longitudinal studies to track changes in QoL over time among postpartum mothers, as some aspects can only be identified over time (Underwood et al., 2016). Our research underscores the importance of conducting further studies across various cultural contexts within Israel. Additionally, we recommend examining the effectiveness of intervention strategies to mitigate the impact of PPD on QoL, as well as investigating the role of social support systems.

**Conclusion**

Quality of life (QoL) is a multidimensional concept affected by physical, psychological, and social well-being. During the postpartum period, the QoL of women reflects their perception and satisfaction with their health concerns within their cultural and social context. Given the effects of various factors on QoL, healthcare research needs to comprehensively identify the factors that affect the QoL of postpartum women as they experience and adapt to various changes. The current study revealed that PPD is a major factor affecting the QoL of postpartum mothers within the Israeli context, similar to studies conducted in other societies. Our findings stress the importance of early screening and intervention for PPD, not just from a mental health perspective but also from improving overall QoL for new mothers. Additionally, the significant ethnic disparities observed underscore there is a critical need for culturally sensitive approaches that address the unique challenges faced by different ethnic groups. Future research should focus on developing targeted support strategies that address both psychological and socio-economic determinants of QoL in vulnerable groups in routine perinatal care and aim to mitigate the adverse effects of PPD on mothers and their families.

**References**

Alfayumi-Zeadna, S. , Kaufman-Shriqui, V. , Zeadna, A. , Lauden, A. , & Shoham-Vardi, I. (2015). The association between sociodemographic characteristics and postpartum depression symptoms among Arab-Bedouin women in Southern Israel. Depression and Anxiety, 32(2), 120–128. https://doi.org/https://doi.org/10.1002/da.22290

Alfayumi-Zeadna, S., Froimovici, M., Azbarga, Z., Grotto, I., & Daoud, N. (2019). Barriers to postpartum depression treatment among Indigenous Bedouin women in Israel: A focus group study. Health & Social Care in the Community, 27(3), 757–766. https://doi.org/10.1111/HSC.12693

Alfayumi-Zeadna, S., Froimovici, M., Rourke, N. O., Azbarga, Z., Okby-Cronin, R., Salman, L., Alkatnany, A., Grotto, I., & Daoud, N. (2021). Direct and indirect determinants of prenatal depression among Arab-Bedouin women in Israel: The role of stressful life events and social support. Midwifery, 96, 102937. https://doi.org/10.1016/J.MIDW.2021.102937

Alfayumi-Zeadna, S., O’rourke, N., Azbarga, Z., Froimovici, M., & Daoud, N. (2022). Temporal Stability of Responses to the Edinburgh Postpartum Depression Scale by Bedouin Mothers in Southern Israel. Public Health, 19, 13959. https://doi.org/10.3390/ijerph192113959

Alfayumi-Zeadna, S., Zeadna, A., Azbarga, Z., Salman, L., Froimovici, M., Alkatnany, A., Grotto, I., & Daoud, N. (2022). A Non-Randomized Controlled Trial for Reducing Postpartum Depression in Low-Income Minority Women at Community-Based Women’s Health Clinics. Maternal and Child Health Journal, 26(8), 1689–1700. https://doi.org/10.1007/S10995-022-03434-1/TABLES/5

Almuqbil, M., Kraidiye, N., Alshmaimri, H., Ali kaabi, A., Almutiri, A., Alanazi, A., Hjeij, A., Alamri, A. S., Alsanie, W. F., Alhomrani, M., & Asdaq, S. M. (2022). Postpartum depression and health-related quality of life: A saudi arabian perspective. *PeerJ*, *10*. https://doi.org/10.7717/peerj.14240

Bauman, B. L., Ko, J. Y., Cox, S., D’Angelo, MPH, D. V., Warner, L., Folger, S., Tevendale, H. D., Coy, K. C., Harrison, L., & Barfield, W. D. (2020). Vital Signs: Postpartum Depressive Symptoms and Provider Discussions About Perinatal Depression — United States, 2018. MMWR. Morbidity and Mortality Weekly Report, 69(19), 575–581. https://doi.org/10.15585/MMWR.MM6919A2

Bina, R., & Harrington, D. (2016). The Edinburgh Postnatal Depression Scale: Screening Tool for Postpartum Anxiety as Well? Findings from a Confirmatory Factor Analysis of the Hebrew Version. Maternal and Child Health Journal, 20(4), 904–914. https://doi.org/10.1007/S10995-015-1879-7/METRICS

Brummelte, S., & Galea, L. A. M. (2016). Postpartum depression: Etiology, treatment and consequences for maternal care. Hormones and Behavior, 77, 153–166. https://doi.org/10.1016/J.YHBEH.2015.08.008

Braveman, P. A., Cubbin, C., Egerter, S., Chideya, S., Marchi, K. S., Metzler, M., & Posner, S. (2005). Socioeconomic status in Health Research. *JAMA*, *294*(22), 2879. https://doi.org/10.1001/jama.294.22.2879 Chang, F.-W., Lee, W.-Y., Liu, Y.-P., Yang, J.-J., Chen, S.-P., Cheng, K.-C., Lin, Y.-C., Ho, T.-W., Chiu, F.-H., Hsu, R.-J., & Liu, J.-M. (2016). The relationship between economic conditions and postpartum depression in Taiwan: A nationwide population-based study. *Journal of Affective Disorders*, *204*, 174–179. https://doi.org/10.1016/j.jad.2016.06.043

Chinweuba, A. U., Okoronkwo, I. L., Anarado, A. N., Agbapuonwu, N. E., Ogbonnaya, N. P., & Ihudiebube-Splendor, C. N. (2018). Differentials in health-related quality of life of employed and unemployed women with normal vaginal delivery. *BMC Women’s Health*, *18*(1). https://doi.org/10.1186/s12905-017-0481-0

Cox, J. L., Holden, J. M., & Sagovsky, R. (1987). Detection of Postnatal Depression: Development of the 10-item Edinburgh Postnatal Depression Scale. The British Journal of Psychiatry, 150(6), 782–786. https://doi.org/10.1192/BJP.150.6.782

Cox J. Thirty years with the Edinburgh Postnatal Depression Scale: Voices from the past and recommendations for the future. Br. J. Psychiatry. 2019;214:127–129. doi: 10.1192/bjp.2018.245

Da Costa, D., Dritsa, M., Rippen, N., Lowensteyn, I., & Khalifé, S. (2005). Health-related quality of life in postpartum depressed women. *Archives of Women’s Mental Health*, *9*(2), 95–102. https://doi.org/10.1007/s00737-005-0108-6

Daoud, N., O’Brien, K., O’Campo, P., Harney, S., Harney, E., Bebee, K., Bourgeois, C., & Smylie, J. (2019). Postpartum depression prevalence and risk factors among Indigenous, non-Indigenous and immigrant women in Canada. Canadian Journal of Public Health, 110(4), 440–452. https://doi.org/10.17269/S41997-019-00182-8/METRICS

Darcy, J. M., Grzywacz, J. G., Stephens, R. L., Leng, I., Clinch, C. R., & Arcury, T. A. (2011). Maternal depressive symptomatology: 16-month follow-up of infant and maternal health-related quality of life. *The Journal of the American Board of Family Medicine*, *24*(3), 249–257. https://doi.org/10.3122/jabfm.2011.03.100201

De Tychey, C., Briançon, S., Lighezzolo, J., Spitz, E., Kabuth, B., De Luigi, V., Messembourg, C., Girvan, F., Rosati, A., Thockler, A., & Vincent, S. (2008). Quality of life, postnatal depression and Baby Gender. *Journal of Clinical Nursing*, *17*(3), 312–322. <https://doi.org/10.1111/j.1365-2702.2006.01911.x>

Eilat-Tsanani, S., Merom, A., Romano, S., Reschef, A., Lavi, I., & Tabenkin, H. (2006). The effect of postpartum depression on women’s consultations with physicians. The Israel Medical Association, 8(6), 406–410.

<https://www.researchgate.net/publication/6952845_The_effect_of_postpartum_depression_on_women%27s_consultations_with_physicians>

Fereidouni, Z., Kamyab, A. H., Dehghan, A., Khiyali, Z., Ziapour, A., Mehedi, N., & Toghroli, R. (2021). A comparative study on the quality of life and resilience of mothers with disabled and neurotypically developing children in Iran. *Heliyon*, *7*(6), e07285. <https://doi-org.bengurionu.idm.oclc.org/10.1016/j.heliyon.2021.e07285>

Gibson J., McKenzie-McHarg K., Shakespeare J., Price J., Gray R. A systematic review of studies validating the Edinburgh Postnatal Depression Scale in antepartum and postpartum women. *Acta Psychiatr. Scand.* 2009;119:350–364. doi: 10.1111/j.1600-0447.2009.01363.x

Ghubash, R., Abou-Saleh, M. T., & Daradkeh, T. K. (1997). The validity of the Arabic Edinburgh postnatal depression scale. *Social Psychiatry and Psychiatric Epidemiology*, *32*(8), 474–476. <https://doi.org/10.1007/BF00789142/METRICS>

Glasser, S., Tanous, M., Shihab, S., Goldman, N., Ziv, A., & Kaplan, G. (2012). Perinatal depressive symptoms among Arab women in Northern Israel. *Maternal and Child Health Journal*, *16*(6), 1197–1205. <https://doi.org/10.1007/S10995-011-0845-2/METRICS>

Glasser, S., Stoski, E., Kneler, V., & Magnezi, R. (2011). Postpartum depression among Israeli Bedouin women. *Archives of Women’s Mental Health*, *14*(3), 203–208. https://doi.org/10.1007/s00737-011-0216-4

Jikamo, B., Adefris, M., Azale, T., & Alemu, K. (2022). Health-related quality of life among postpartum women with preeclampsia, southern Ethiopia: a prospective cohort study. *Health and quality of life outcomes*, *20*(1), 147. <https://doi-org.bengurionu.idm.oclc.org/10.1186/s12955-022-02061-2>

Katon, W., Russo, J., & Gavin, A. (2014). Predictors of postpartum depression. *Journal of women's health*, *23*(9), 753-759.

Lee, Y. L., Tien, Y., Bai, Y. S., Lin, C. K., Yin, C. S., Chung, C. H., Sun, C. A., Huang, S. H., Huang, Y. C., Chien, W. C., Kang, C. Y., & Wu, G. J. (2022). Association of Postpartum Depression with Maternal Suicide: A Nationwide Population-Based Study. *International Journal of Environmental Research and Public Health*, *19*(9), 5118. <https://doi.org/10.3390/IJERPH19095118/S1>

Levis, B., Negeri, Z., Sun, Y., Benedetti, A., & Thombs, B. D. (2020). Accuracy of the Edinburgh Postnatal Depression Scale (EPDS) for screening to detect major depression among pregnant and postpartum women: systematic review and meta-analysis of individual participant data. *BMJ*, *371*. <https://doi.org/10.1136/BMJ.M4022>

Li J, Yin J, Waqas A, Huang Z, Zhang H, Chen M, Guo Y, Rahman A, Yang L, Li X. Quality of Life in Mothers With Perinatal Depression: A Systematic Review and Meta-Analysis. Front Psychiatry. 2022 Feb 15;13:734836. doi: 10.3389/fpsyt.2022.734836. PMID: 35242060; PMCID: PMC8886107.

Liu, Y., Zhang, L., Guo, N., & Jiang, H. (2021). Postpartum depression and postpartum post-traumatic stress disorder: prevalence and associated factors. *BMC psychiatry*, *21*(1), 487. https://doi-org.bengurionu.idm.oclc.org/10.1186/s12888-021-03432-7

Mahumud, R. A., Ali, N., Sheikh, N., Akram, R., Alam, K., Gow, J., Sarker, A. R., & Sultana, M. (2019). Measuring perinatal and postpartum quality of life of women and associated factors in semi-urban Bangladesh. *Quality of Life Research*, *28*(11), 2989–3004. <https://doi.org/10.1007/s11136-019-02247-0> Mousavi, F., & Shojaei, P. (2021). Focus: preventive medicine: postpartum depression and quality of life: a path analysis. *The Yale journal of biology and medicine*, *94*(1), 85

Mthembu, J., Mabaso, M., Reis, S., Zuma, K., & Zungu, N. (2021). Prevalence and factors associated with intimate partner violence among the adolescent girls and young women in South Africa: findings the 2017 population based cross-sectional survey. *BMC public health*, *21*(1), 1160. https://doi-

Muhammad, E. H., Salim, M. A., Fadhil, A. A., Alghazali, T., Jawad, I. A., mohammed Mohsin, R., ... & Hassan, Z. F. (2022). Postpartum depression in Iraqi women: Identifying quality of life and self-regulatory behaviors. *Archives of Clinical Psychiatry*, *49*(5).

O’Hara, M. W., & McCabe, J. E. (2013). *Postpartum Depression: Current Status and Future Directions*. <https://doi.org/10.1146/annurev-clinpsy-050212-185612>

Pearlstein, T., Howard, M., Salisbury, A., & Zlotnick, C. (2009). Postpartum depression. *American Journal of Obstetrics and Gynecology*, *200*(4), 357–364. <https://doi.org/10.1016/J.AJOG.2008.11.033>

*Population of Israel on the Eve of 2024*. (2023). www.cbs.gov.il

Shwartz, N., Shoahm-Vardi, I., & Daoud, N. (2019). Postpartum depression among Arab and Jewish women in Israel: Ethnic inequalities and risk factors. *Midwifery*, *70*, 54–63.

Prick, B. W., Bijlenga, D., Jansen, A. J. G., Boers, K. E., Scherjon, S. A., Koopmans, C. M., van Pampus, M. G., Essink-Bot, M.-L., van Rhenen, D. J., Mol, B. W., & Duvekot, J. J. (2015). Determinants of health-related quality of life in the postpartum period after obstetric complications. *European Journal of Obstetrics &amp; Gynecology and Reproductive Biology*, *185*, 88–95. https://doi.org/10.1016/j.ejogrb.2014.11.038

Puciato, D., Rozpara, M., Bugdol, M., Oleśniewicz, P., & Jáčová, H. (2020). Health-related quality of life and socio-economic status of the unemployed. *E+M Ekonomie a Management*, *23*(3), 23–37. https://doi.org/10.15240/tul/001/2020-3-002

Raghupathi, V., & Raghupathi, W. (2020). The influence of education on health: an empirical assessment of OECD countries for the period 1995-2015. *Archives of public health*, *78*, 20. https://doi-org.bengurionu.idm.oclc.org/10.1186/s13690-020-00402-5Top of Form

Bottom of Form

Ramlakhan, K. P., van der Zande, J. A., Roos-Hesselink, J. W., Franx, A., & Cornette, J. (2023). Long-term quality of life after obstetric intensive care unit admission: A cross-sectional cohort study. *BJOG : an international journal of obstetrics and gynaecology*, *130*(7), 813–822. https://doi-org.bengurionu.idm.oclc.org/10.1111/1471-0528.17400

Rosenman, R., Tennekoon, V., & Hill, L. G. (2011). Measuring bias in self-reported data. *International Journal of Behavioural and Healthcare Research*, *2*(4), 320. https://doi.org/10.1504/ijbhr.2011.043414

Sadat, Z., Abedzadeh Kalahroudi, M., Kafaei Atrian, M., Karimian, Z., & Sooki, Z. (2014). The impact of postpartum depression on quality of life in women after child’s birth. *Iranian Red Crescent Medical Journal*, *16*(2). https://doi.org/10.5812/ircmj.14995

Sainuddin, S. S., Norhayati, M. N., Abdul Kadir, A., & Zakaria, R. (2023). A 10-year systematic review and meta-analysis of determinants of postpartum depression in the Association of Southeast Asian Nations countries. *The Medical journal of Malaysia*, *78*(5), 675–686.

Shwartz, N., Shoahm-Vardi, I., & Daoud, N. (2019). Postpartum depression among Arab and Jewish women in Israel: Ethnic inequalities and risk factors. *Midwifery*, *70*, 54–63. https://doi-org.bengurionu.idm.oclc.org/10.1016/j.midw.2018.12.011

Spector, P. E. (2019). Do not cross me: Optimizing the use of cross-sectional designs. *Journal of Business and Psychology*, *34*(2), 125–137. https://doi.org/10.1007/s10869-018-09613-8

Slomian, J., Honvo, G., Emonts, P., Reginster, J.-Y., & Bruyère, O. (2019). Consequences of maternal postpartum depression: A systematic review of maternal and infant outcomes. *Women’s Health*, *25*, 1–55. <https://www-ncbi-nlm-nih> gov.bengurionu.idm.oclc.org/pmc/articles/PMC6492376/pdf/10.1177\_1745506519844044.pdf

Tola, Y., Ayele, G., Boti, N., Yihune, M., Gethahun, F., & Gebru, Z. (2021). Health-related quality-of-life and associated factors among post-partum women in Arba minch town. *International Journal of Women’s Health*, *Volume 13*, 601–611. https://doi.org/10.2147/ijwh.s295325 *The Economic Outcomes of an Ethnic Minority: The Role of Barriers | IZA - Institute of Labor Economics*. (n.d.). Retrieved January 29, 2024, from <https://www.iza.org/publications/dp/13120/the-economic-outcomes-of-an-ethnic-minority-the-role-of-barriers>

Tran DB, Pham TDN, Nguyen TT. The influence of education on women's well-being: Evidence from Australia. PLoS One. 2021 Mar 24;16(3):e0247765. doi: 10.1371/journal.pone.0247765. PMID: 33760853; PMCID: PMC7990187.

Vilella, E., Gutiérrez-Zotes, A., Gaviria, A., Cañellas, F., Albacar, G., Gornemann, I., Sanjuan, J., García-Esteve, L., Martín-Santos, R., Guillamat, R., & Diego, Y. de. (2012). *Employment during pregnancy protects against postpartum depression*. INTECH Open Access Publisher.

Wang, D., Li, Y.-L., Qiu, D., & Xiao, S.-Y. (2021). Factors influencing paternal postpartum depression: A systematic review and meta-analysis. *Journal of Affective Disorders*, *293*, 51–63. <https://doi.org/10.1016/j.jad.2021.05.088>

WHO (World Health Organization). (2020) a. WHOQOL: Measuring Quality of Life. Hebrew\_WHOQOL-BREF. <https://www.who.int/tools/whoqol/whoqol-bref/docs/default-source/publishing-policies/whoqol-bref/hebrew-whoqol-bref>

WHO (World Health Organization). (2020) b. WHOQOL: Measuring Quality of Life. Arabic\_WHOQOL-BREF. <https://www.who.int/tools/whoqol/whoqol-bref/docs/default-source/publishing-policies/whoqol-bref/arabic-whoqol-bref>

Williams, D. R., Mohammed, S. A., Leavell, J., & Collins, C. (2010). Race, socioeconomic status, and health: Complexities, ongoing challenges, and research opportunities. *Annals of the New York Academy of Sciences*, *1186*(1), 69–101. https://doi.org/10.1111/j.1749-6632.2009.05339.x

Yang, X., Yao, L., Wu, H., Wang, Y., Liu, L., Wang, J., & Wang, L. (2016). Quality of life and its related factors in Chinese unemployed people: A population-based cross-sectional study. *International Journal of Environmental Research and Public Health*, *13*(8), 797. https://doi.org/10.3390/ijerph13080797

Yim, I. S., Stapleton, L. R. T., Guardino, C. M., Hahn-Holbrook, J., & Schetter, C. D. (n.d.). *Biological and Psychosocial Predictors of Postpartum Depression: Systematic Review and Call for Integration*. https://doi.org/10.1146/annurev-clinpsy-101414-020426

Zubaran, C., & Foresti, K. (2011). Investigating quality of life and depressive symptoms in the postpartum period. *Women and Birth*, *24*(1), 10–16. https://doi.org/10.1016/j.wombi.2010.05.002