Evaluation of the Predictors of the Quality of Life in the Postpartum Period: A Cross-Sectional Study

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Abstract

Background: It is necessary to study the predictors of life quality in the early postpartum period. Early diagnosis, timely care and intervention can improve the health of mother and baby. We aimed to evaluate the predictors of the quality of life in the postpartum period.

Methods: This cross-sectional study was conducted on 407 eligible women aged 18 to 47 yr, in the postpartum period, selected from clinics affiliated with Shahid Beheshti University of Medical Sciences, Tehran, Tehran, Iran in 2018. Data were collected using a demographic and obstetric questionnaire and Maternal Postpartum Quality of Life (MAPP-QOL) with Cronbach's alpha coefficients of 0.96 to assess personal details and postpartum quality of life. Data analyzed using SPSS. Linear regression analysis was performed to examine the relationship between maternal predictors and quality of life in the postpartum period.

Results: The postpartum quality of life had a significant relationship with income status (P<0.001), Number of Children (P=0.031), mother's education (P=0.009) and maternal complications (P<0.001).

Conclusion: This study confirmed the relationship between maternal predictors and the postpartum quality of life. It could facilitate clinicians and educators to improve the quality of life for postpartum women.

Keywords: Postpartum; Quality of life; Predictor; Maternal

Introduction

The postpartum periods consist of the first six weeks following childbirth (1). This period is a critical period associated with a series of changes in the mother that have social, mental and physical effects on her life (2). Coping with all these changes affects the quality of life and health status of postpartum women. Any additional changes may lead to a remarkable increase in psychological problems, such as depression (3). Studies conducted on the quality of life in postpartum women have noted the negative impacts of
clinical and environmental factors such as pain, fatigue, urinary incontinence(3), pregnancy complications (4), type of childbirth(5), postpartum depression status(6) and sexual dysfunction (7), the inadequacy of social support, heavy workload, not sharing tasks with the husband (6), high maternal BMI(8), and postpartum depression(9), on the mother's subjective quality of life, which are important issues that act as an indicator of the mother's and child's health (10).

In a study, education and duration after labour were identified as predictors of postpartum (11). Moreover, in Brazil, race and marital cohabitation are predictors of postpartum quality of life (12). Besides, in Bangladesh, infant weight is a positive predictor of postpartum quality of life. In contrast, low maternal age, cesarean section, poor marital relationships, and inadequate postpartum care counseling are among negative predictors of postpartum quality of life (13). A significant relationship between urinary incontinence and HIV with the maternal quality of life in the postpartum period was reported (14).

Since little is known about these factors' long-term complications for postpartum women's life, the follow-up of postpartum women is an essential and challenging task (15). Ignoring the potential long-term repercussions of exposure to a life-threatening condition may hinder the desirable convergence between a reduction in maternal morbidity and a decrease in severe pregnancy-related complications (16). Inadequate postpartum surveillance may thus adversely affect mothers' quality of life) 14). Thus, careful follow-up of postpartum women in terms of these factors can help improve healthcare and prevent further damage (17).

Quality of life refers to “an individual's perception of their position in life in the context of the culture and value systems in which they live, concerning their goals, expectations, standards and concerns”(18). According to WHO, quality of life consists of six domains: Physical health, psychological state, level of independence, social relations, environment, and spirituality/religion/personal beliefs (19). Quality of life is defined as the general health of people and societies. It entails both positive and negative aspects of life and life satisfaction, including satisfaction with physical health, family, education, occupation, wealth, religious beliefs, financial status, and environment (20).

Studies about predictors of postpartum quality of life in Iran are rare. In this regard, some studies have been conducted in the United States (21) that due to the impact of culture and living conditions on quality of life, these studies' results cannot be generalized to Iran. In most studies, the postpartum quality of life has been determined using general quality of life tools, while these tools have not been successful in assessing essential and influential factors in the quality of life after childbirth. We aimed to determine the predictors of postpartum quality of life in Iranian women. Identifying predictors of postpartum quality of life will enable gynecologists, midwives, and other healthcare providers to recognize promptly essential and influential factors to provide appropriate interventions and promote women's health during this period.

**Methods**

This cross-sectional study was conducted on 407 eligible women in the postpartum period who visited health centers affiliated to Shahid Beheshti University of Medical Sciences in Tehran, Iran in 2018. At first, the city of Tehran was divided into five regions. Two health centers with the highest number of clients were selected from each region. Eligible individuals were chosen by purposive and convenience sampling methods from each center. The number of samples chosen from each center was in proportion to the number of clients in that center. Then, after obtaining written consent, the digital questionnaires were sent to them online. The sample size was reached based on $\alpha$ of 0.05, Power $(1-\beta)$ of 0.80, and $\delta=22$ (11). At least 400 participants were determined considering sample attrition of 20%.

The study was approved by the Ethics Committee of Shahid Beheshti University of Medical Sciences in Tehran, Iran, with the code of ethics.
The participants were provided with details on the study objectives and asked to sign an informed consent form. Based on the inclusion criteria, 18-47-year-old women in the postpartum period, whose baby was alive, and who were able to read and understand Farsi were recruited. Women with mild illnesses and maternal complications (hemorrhage, diabetes, hypertension and preterm) were not excluded from the study; however, based on the exclusion criteria, mothers with self-reported severe chronic illnesses and a history of mental disorder, and infant death in their recent pregnancy were excluded from the study.

Demographic and obstetric questionnaire
The demographic and obstetric questionnaire included demographic items such as woman's age, family income, woman's and husband's level of education, employment status, maternal complications including hemorrhage, diabetes, hypertension and preterm.

MAPP QOL questionnaire
The postpartum quality of life was assessed using the translated version of the Maternal Postpartum Quality of Life (MAPP-QOL) as a valid, 38-item, self-report scale. MAPP-QOL showed good content validity; content validity ratio (CVR) ranged from 0.6 to 1.00 and content validity index (CVI) ranged from 0.7 to 1.00. Using exploratory factor analysis, five factors were extracted, including Socioeconomic; Relational/Family-Friends; Psychological/Baby; and Health & functioning; relational/ spouse-partner. Which together explained 78.84% of total variance. After modifications of CFA, all goodness of fit indices confirmed the model fit ($\chi^2=1677.57\text{N}=200; \text{df}=644, P<0.001; \text{PCFI}=0.831; \text{PNFI}=0.786; \text{CMIN/DF}=2.604; \text{RMSEA}=0.051; \text{IFI} =0.908, \text{CFI}=0.907$). The Cronbach’s alpha, McDonald’s omega, Composite reliability and maximum reliability H of the five extracted factors were excellent (0.9<). Moreover, the AIC values of factors were good (between 0.721 to 0.859). All factors had a convergent and divergent validity.

MAPP-QOL scoring was based on the method proposed for the quality life index (QLI) by Ferrans and Powers. The possible total score of the MAPP-QOL is 38-228 with higher scores showing better QOL. The possible range for the total score and the subscale scores is 0 to 30, which is the same for all scale versions. Higher scores on the scale indicate better QoL than lower scores. The MAPP-QOL tool used a Likert-type scale with her satisfaction with each item (1–6), with 1=very dissatisfied and 6=very satisfied. (Raw score-The lowest raw score)/(The lowest raw score-The highest raw score ) ×30

Statistical analysis
The linear regression was calculated between the socio-demographic, clinical characteristics and quality of life scores in the postpartum period. The data obtained were analyzed in SPSS-25 (IBM Corp., Armonk, NY, USA). Descriptive statistics were applied to present the postpartum quality of life data, create tables, and calculate the scores' percentage, mean, and standard deviation. Inferential statistics were used for analyzing the data and examining the relationship between the variables. Correlations between the variables were studied using Pearson's correlation coefficients. Regression models were employed to examine the relationships between the dependent and independent variables ($P<0.05$).

Results
Overall, 407 participants were aged between 18 and 47 yr, with a mean age of 29±5.75 yr, number of children1.72±0.95, gestational age 38.38±2.08 weeks. The infants were 47.4% girls and 52.6% boys. 58.5% of childbirths were vaginal and 41.5% by cesarean. Of the infants born, 85.7% were breastfed, 13.3% were fed on formula feeding and 1% on both. 69.5% of women were housewives, and 30.5% working, 58.9% had university educations and the rest had diploma or lower (Table 1).
Table 1: The socio-demographic and clinical characteristics of the participants (n=407)

| Variable                          | Results |
|----------------------------------|---------|
| Age                              | Mean±SD | 29±5.75 |
| Gestational age                  | Mean±SD | 38.38±2.08 |
| Number Of Children               | Mean±SD | 1.72±0.95 |
| Income status,n(%)               |         |         |
| Above100million Rials            | 194(47.7) |
| 50-100million Rials              | 7(6.6)  |
| 30-5million Rials                | 159(39.1) |
| Below30 million Rials            | 27(6.6)  |
| Child's gender,n(%)              |         |         |
| Girl                             | 193(47.4) |
| Boy                              | 214(52.6) |
| Mother's education,n(%)          |         |         |
| Elementary                       | 10(2.5)  |
| Junior highschool                | 30(7.4)  |
| Highschool                       | 126(31.0) |
| University                       | 240(58.9) |
| Pregnancy complications,n(%)     |         |         |
| Gestational diabetes             | 34(8.4)  |
| Hypertension                     | 46(11.3) |
| Hemorrhage                       | 17(4.2)  |
| Preterm delivery                 | 19(4.7)  |
| None                             | 291(71.5) |
| Type of infant feeding,n(%)      |         |         |
| Formula feeding                  | 54(13.3) |
| Breastfeeding                    | 349(85.7) |
| Both                             | 4(1.0)   |
| Type of delivery, n(%)           |         |         |
| Normal delivery                  | 238(58.5) |
| Cesarean section                 | 169(41.5) |
| Mother's employment, n(%)        |         |         |
| No                               | 281(69.5) |
| Yes                              | 124(30.5) |
| QOL score                        | Mean±SD | 24.37±4.08 |

The participants' socio-demographic and clinical characteristics present the mean scores and standard deviations in the five subscales of the MAPP-QOL (Table 2). The highest quality of life after childbirth score (25.85±7.14) was gained by the subscale of relationship with the spouse or partner (Relational/Spouse-Partner) and the lowest score (22.76±8.26) by the subscale of relationship with family and friends (Relational/Family-Friends) (Table 2).
Table 2: The scores of the different subscales of the MAPP-QOL (n=407)

| Subscale                  | Mean | Std.Deviation | Minimum | Maximum |
|---------------------------|------|---------------|---------|---------|
| Socioeconomic             | 24.57| 7.16          | .00     | 30.00   |
| Relational/Family-Friends | 22.76| 8.26          | .00     | 30.00   |
| Psychological/Baby        | 25.53| 6.46          | .00     | 30.00   |
| Health and Functioning    | 24.78| 6.35          | .00     | 30.00   |
| Relational/Spouse-Partner | 25.85| 7.14          | .00     | 30.00   |
| Total Score               | 24.37| 4.08          | 9.85    | 30.00   |

In the first stage, the univariate regression analysis was performed for the variables of age, group, education and other variables. Then, the age variable that was not significant \((P>0.50)\) was excluded from the regression analysis. When the age variable was excluded, the regression, income status, education, pregnancy complications, and children's number became significant. The exclusion of other insignificant variables left no more significant variables.

According to this model, the variables of income status \((P<0.001, \text{B}=1.043)\), number of children \((P=0.031, \text{B}=-0.457)\), mother's education \((P=0.009, \text{B}=1.184)\), and maternal complications \((P<0.001, \text{B}=0.504)\) were the final predictors of postpartum quality of life score in the studied women. Above 10 million Tomans income compared to the income of three million Tomans per month, if other variables remain constant, increases the overall score of quality of life after childbirth by an average of 1.043 units. With an increase in the number of children, if all variables remain constant, the overall score of quality of life after delivery decreases by an average of 0.457 units. For women with university educations, compared to women with primary education, if all variables remain constant, the overall score of quality of life after childbirth shows an average increase of 1.184 points. For women without maternal complications, if all variables remain constant, the overall score of quality of life after childbirth increases by an average of 0.504 units, compared to women with these complications (Table 3).

As shown in the figures, maternal predictors such as maternal complications, income status, education, and children's number are related to the quality of life score. There was a positive correlation between increased income and postpartum quality of life. Mothers who were in a better financial status had a higher quality of life after childbirth (Fig.1-A). Mothers with fewer children also had higher quality of life scores (Fig.1-B). The 407 mothers who participated in the study had education levels ranging from elementary school to university and education was positively correlated with quality of life (Fig.1-C). Furthermore, the mothers who had pregnancy complications had lower quality of life scores in the postpartum period (Fig. 1-D).
Table 3: The linear regression analysis of significant demographic and clinical variables in the postpartum quality of life (MAPP-QOL)\(n=407\)

| Variables                      | N   | QOL.SCORE | Unstandardized Coefficients | Standardized Coefficient | P-Value |
|--------------------------------|-----|-----------|----------------------------|---------------------------|---------|
|                                |     | Mean      | Std. Deviation             | B            | Std. Error | Beta |
| gestational age                |     |           |                           |               |           |      |
| Income status                  |     |           |                           |               |           |      |
| Above100 Million Rials        | 194 | 25.480    | 3.744                     | .013          | .888     |
| 50-100 Million Rials          | 27  | 24.923    | 3.602                     | 1.043         | .184     | .271 | .001 |
| 30-50 Million Rials           | 159 | 23.447    | 4.200                     |               |          |      |
| Below 30 Million Rials        | 27  | 21.373    | 3.579                     |               |          |      |
| Child's gender                 |     |           |                           |               |           |      |
| Girl                           | 193 | 24.006    | 4.160                     | .490          | .384     | .060 | .202 |
| Boy                            | 214 | 24.711    | 4.004                     |               |          |      |
| Number of Children            |     |           |                           |               |           |      |
| 1child                         | 211 | 24.697    | 3.991                     |               |          |      |
| 2child                         | 127 | 24.374    | 4.231                     |               |          |      |
| 3child                         | 45  | 23.781    | 4.067                     | -.457         | .212     | -.106 | .031 |
| 4child                         | 17  | 23.375    | 3.633                     |               |          |      |
| 5child                         | 5   | 20.800    | 5.173                     |               |          |      |
| 6child                         | 0   | 0         | 0                         |               |          |      |
| 7child                         | 1   | 19.538    | 0                         |               |          |      |
| Mother's education             |     |           |                           |               |           |      |
| Elementary school             | 17  | 22.898    | 2.189                     |               |          |      |
| Junior high school            | 10  | 22.071    | 3.367                     |               |          |      |
| High school                   | 30  | 23.913    | 4.137                     | 1.184         | .450     | .126 | .009 |
| University                    | 126 | 25.074    | 3.963                     |               |          |      |
| Maternal complications        |     |           |                           |               |           |      |
| Gestational Diabetes          | 34  | 22.7647   | 3.7435                    |               |          |      |
| Hypertension                  | 46  | 22.448    | 3.908                     |               |          |      |
| Hemorrhage                    | 17  | 23.339    | 2.544                     | .504          | .145     | .172 | .001 |
| Preterm delivery              | 19  | 22.987    | 3.417                     |               |          |      |
| None of them                  | 291 | 25.021    | 4.106                     |               |          |      |
| Type of infant feeding        |     |           |                           |               |           |      |
| Formula feeding               | 54  | 23.561    | 3.908                     | .268          | .530     | .024 | .613 |
| Breast feeding                | 349 | 24.524    | 4.112                     |               |          |      |
| Both                           | 4   | 22.500    | 3.470                     |               |          |      |
| Type of childbirth            |     |           |                           |               |           |      |
| Normal delivery               | 238 | 24.418    | 4.117                     | .212          | .387     | .026 | .585 |
| Cesarean section              | 169 | 24.318    | 4.060                     |               |          |      |
| Mother's employment           |     |           |                           |               |           |      |
| Yes                            | 124 | 23.522    | 4.044                     | .195          | .347     | .027 | .574 |
| No                             | 281 | 24.102    | 4.139                     |               |          |      |

a. Dependent Variable: QoL.SCORE  
b. P-Value<0.05 is significant
Discussion

The linear regression results showed that income status, number of children (gravida), maternal complications, and mother's education have a significant positive relationship with the postpartum quality of life. Maternal complications such as hemorrhage, diabetes, hypertension and preterm have a significant adverse effect on women's quality of life during the postpartum period.

In this study, maternal complications, mothers with hypertension have a significant adverse effect on the quality of life score than mothers with the other complications (the higher was the total score, the better was quality of life). Low quality of life could be explained by hypertension (22). Similarly, women with severe preeclampsia (high hypertension) had a reduced postpartum quality of life (23). Preterm infants' mothers reported a significantly lower quality of life than the mothers of term infants (24). Postpartum hemorrhage affects women's quality of life through anaemia and the resulting fatigue (25).

There was a significant relationship between postpartum complications (blood pressure, diabetes, preterm and postpartum hemorrhage) and their quality of life score in this study. Mothers with complications such as hypertensive disorders, preterm delivery, hemorrhage and diabetes should receive counseling for these disorders, associated with a higher lifetime risk of maternal disease.

The present study showed that there is a significant relationship between mother's higher education and a better quality of life. Women's quality

Fig.1: The postpartum quality of life and its demographic and clinical predictors

A comparison of quality of life and maternal predictors (A-D):

(A) Quality of life reduced as income status decreased;
(B) Quality of life reduced as the number of children increased;
(C) Quality of life increased as education increased;
(D) Quality of life reduced as maternal complications increased.
of life during the postpartum period is affected by social factors in education (6). A survey evaluating the quality of life of 260 postpartum women living in Turkey noted that the postpartum quality of life is substantially affected by education and economic status (26). Mothers’ prenatal education had a higher level of happiness in their overall quality of life (27). Health centers should pay special attention to non-educated women and provide the necessary training to women before childbirth to prevent the decline of women’s quality of life by increasing their knowledge.

In this study, there was a significant relationship between good financial status and improving women’s quality of life. There is a role for better financial status in improving the quality of life in different populations in various studies. There was a relationship between financial status and health-related quality of life (28). Unemployed and low-income people had a low quality of life (29). Another study showed the relationship between people's financial problems and reduced quality of life (30).

The positive correlation between health and financial status has been well established in the literature (31). Women with an economically disadvantaged status have limited access to health facilities (32). Socioeconomic status is positively associated with the postpartum quality of life (33). To conclude, a suitable financial status helps improve women’s quality of life during the postpartum period (18). Health was one of the main dimensions of quality of life (34,35). One of the reasons for the lack of health in women is the poor financial situation that prevents proper access to health services.

In this study, there was a significant relationship between having fewer children and a better quality of life for the mother. Increased responsibilities combined with maternal duties may affect women's health-related quality of life (18). Many women prefer their children's needs over their own and actively adjust their lifestyles to these (36). All mothers shared several maternal challenges, as motherhood can be challenging and negatively affect well-being and quality of life (36).

Other studies reported similar results, and a significant relationship was observed between the quality of life and gravid (18,37).

Support is one of the most critical dimensions of quality of life in most quality-of-life tools (34,35). Lack of necessary support can reduce the quality of life of women (34,35). Spouse support in our study was associated with a better quality of life score after childbirth. Social support along with family support can have a significant impact on improving the quality of life.

Timely and comprehensive postpartum care should be considered for all women throughout the world. Providing support to women and improving their access to postpartum care may influence their health and quality of life in the postpartum period. Health authorities and policymakers should adopt measures to address these issues to better the quality of life in the postpartum period. The present study’s findings might help policymakers design new health interventions to address some of the factors contributing to the maternal quality of life.

This study's major strength is the use of a dedicated instrument for measuring the quality of life after childbirth in Iran. The specific tools can show both small and clinically significant changes. Sampling from all over Iran was not possible in this study, so participants were only chosen from ten of Tehran’s health centers. Of course, a variety of Iran ethnicities is living in Tehran. Through further research, it can be determined whether this study's generalization to the whole country of Iran is valid or not. Another limitation of this study is that it is difficult to evaluate the relationships between variables in cross-sectional studies, so longitudinal studies are needed to examine the factors affecting the predictors of postpartum quality of life.

**Conclusion**

Financial status, pregnancy complications, number of pregnancies and mother's education predict the quality of life after childbirth. The present study's findings can be beneficial for obstetricians
and gynecologists in health centers and hospitals. Increasing the participation and knowledge of mothers in using health services can positively affect their health and quality of life. High-risk pregnancies reduce the quality of life after childbirth. Providing appropriate pregnancy services and timely diagnosis of pregnancy problems, providing the necessary education to reduce these problems by midwives and gynecologists, can help improve women’s quality of life during pregnancy. Besides, women with higher education have a higher quality of life. Pregnancy service providers need to pay more attention to raising knowledge and pregnancy counseling of homemakers and low-educated women. Moreover, social, family and husband support in women who have more children will play an essential role in improving women’s quality of life.

Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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Conflicts of interest

The authors declare that they have no competing interests.

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References

1. Bates SM, Greer IA, Middeldorp S, Veenstra DL, Prabulos AM, Vandvik PO (2012). VTE, thrombophilia, antithrombotic therapy, and pregnancy: antithrombotic therapy and prevention of thrombosis, 9th ed American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest, 141(2 Suppl):e691s-e736s.
2. Ko Y (2004). Postpartum fatigue. Hu li za zhi, 51(6):75-79. https://pubmed.ncbi.nlm.nih.gov/15614680/
3. Schytt E, Lindmark G, Waldenström U (2005). Physical symptoms after childbirth: prevalence and associations with self-rated health. BJOG, 112(2):210-217.
4. Rezaei N, Tavalaee Z, Sayehmiri K, Sharifi N, Daliri S (2018). The relationship between quality of life and methods of delivery: a systematic review and meta-analysis. Electronic Physician, 10(4):6596-6607.
5. Petrou S, Kim SW, McParland P, Boyle EM (2017). Mode of delivery and long-term health-related quality-of-life outcomes: a prospective population-based study. Birth, 44(2):110-119.
6. Tungchama F, Piwuna C, Amiya’u A, et al. (2017). Independent socio-demographic and clinical correlates associated with the perception of quality of life of women with postpartum depression in North-central, Nigeria. Int J Psychiatry Clin Pract, 21(4):292-301.
7. Ghazanfarpour M, Khadivzaadeh T, Babakhanian M (2016). Investigating the relationship between sexual function and quality of life in menopausal women. J Family Reprod Health, 10(4):191-197.
8. Sahra korpi N, Koivusalo SB, Stach-Lempinen B, Eriksson JG, Kautiainen H, Roine RP (2017). The Burden of Pregnancy;heavier for the heaviest?The changes in Health Related Quality of Life (HRQoL): assessed by the 15D instrument during pregnancy and postpartum in different body mass index groups: a longitudinal survey. Acta Obstet Gynecol Scand, 96(3):352-358.
9. Papamarkou M, Sarafis P, Kaite CP, Malliarou M, Tsounis A, Niakas D (2017). Investigation of
the association between quality of life and depressive symptoms during postpartum period: a correlational study. *BMC Womens Health*, 17(1):115.

10. Calou CGP, de Oliveira MF, Carvalho FHC, et al (2018). Maternal predictors related to quality of life in pregnant women in the Northeast of Brazil. *Health Qual Life Outcomes*, 16(1):109.

11. Rezaei N, Azadi A, Zargoussi R, Sadoughi Z, Tavalaee Z, Rezayati M (2016). Maternal health-related quality of life and its predicting factors in the postpartum period in Iran. *Scientifica (Cairo)*, 2016:8542147.

12. Zubaran C, Foresti K, Schumacher MV, Muller LC, Amoretti AL (2009). An assessment of maternal quality of life in the postpartum period in southern Brazil: a comparison of two questionnaires. *Clinics (Sao Paulo)*, 64(8):751-756.

13. Mahumud RA, Ali N, Sheikh N, Akram R, et al (2019). Measuring perinatal and postpartum quality of life of women and associated factors in semi-urban Bangladesh. *Qual Life Res*, 28(11): 2989-3004.

14. Van der Woude DA, Pijnenborg JM, de Vries J (2015). Health status and quality of life in postpartum women: a systematic review of associated factors. *Eur J Obstet Gynecol Reprod Biol*, 185: 45-52.

15. Kobilsinsky M, Chowdhury ME, Moran A, Ronsmans C (2012). Maternal morbidity and disability and their consequences: neglected agenda in maternal health. *J Health Popul Nutr*, 30(2):124-130.

16. Souza JP, Cecatti JG, Parpinelli MA, Krupa F, Osis MJ (2009). An emerging “maternal near-miss syndrome”: Narratives of women who almost died during pregnancy and childbirth. *Birth*, 36(2):149-158.

17. Storeng K T, Drabo S, Ganaba R, Sundby J, Calvert C, Filippi V (2012). Mortality after near-miss obstetric complications in Burkina Fasomedical, social and health-care factors. *Bull World Health Organ*, 90(6):418-425B.

18. Chimweuba AU, Okoronkwo II, Anarado AN, Aghapuonwu NE, Ogbonnaya NP, Ihudiebube-Splendor CN (2018). Differentials in health-related quality of life of employed and unemployed women with normal vaginal delivery. *BMC Women’s Health*, 18(1):13.

19. World Health Organization (2016). WHO recommendations on antenatal care for a positive pregnancy experience. Genesa: World Health Organization.

20. McGregor JA, Camfield L, Woodcock A (2009). Needs, wants and goals: Wellbeing, quality of life and public policy. *Appl Res Qual Life*, 4(2):135-154.

21. Hill PD, Aldag JC (2007). Maternal perceived quality of life following childbirth. *J Obstet Gynecol Neonatal Nurs*, 36(4):328-334.

22. Prick BW, Bijlenga D, Jansen AJ, et al (2015). Determinants of health-related quality of life in the postpartum period after obstetric complications. *Eur J Obstet Gynecol Reprod Biol*, 185: 88-95.

23. Witt WP, Lirzelman K, Spear HA, et al (2012). Health-related quality of life of mothers of very low birth weight children at the age of five: results from the newborn lung project statewide cohort study. *Qual Life Res*, 21(9):1565-1576.

24. Hill PD, Aldag JC, Hekel B, Riner G, Bloomfield P (2006). Maternal postpartum quality of life questionnaire. *J Nurs Meas*, 14(3):205-220.

25. Flores CJ, Yong A, Knights E, et al (2020). Maternity iron, anaemia and blood management in South Australia: a practice-based evidence for clinical practice improvement. *Vox Sanginis*, 115(8):735-744.

26. Ozdemir ME, Cilingir IU, Ilhan G, Yildiz E, Ohanoglu K (2018). The effect of the systematic birth preparation program on fear of vaginal delivery and quality of life. *Arb Gynecol Obstet*, 298(3):561-565.

27. Bahrami N, Simbar M, Bahrami S (2013). The effect of prenatal education on mother’s quality of life during first year postpartum among Iranian women: a randomized controlled trial. *Int J Fertil Steril*, 7(3):169-174.

28. Kokaliari E (2018). Quality of life, anxiety, depression, and stress among adults in Greece following the global financial crisis. *International Social Work*, 61(3):410-424.

29. Huang R, Ghose B, Tang S (2020). Effect of financial stress on self-reported health and quality of life among older adults in five developing countries: a cross sectional analysis of WHO-SAGE survey. *BMC Geriatr*, 20(1):288.

30. Koskinen J-P, Färkkilä N, Sintonen H, Saarto T, Taari K, Roine RP (2019). The association of
financial difficulties and out-of-pocket payments with health-related quality of life among breast, prostate and colorectal cancer patients. *Acta Oncol*, 58(7):1062-1068.

31. Symon A, Dobb B (2011). Maternal quality of life assessment: the feasibility of antenatal–postnatal follow-up using the Mother-Generated Index. *J Reprod Infant Psychol*, 29(2):183-194.

32. McLeish J, Redshaw M (2019). Maternity experiences of mothers with multiple disadvantages in England: a qualitative study. *Women Birth*, 32(2):178-184.

33. Bodhare TN, Sethi P, Bele SD, Gayatri D (2015). Postnatal quality of life, depressive symptoms, and social support among women in southern India. *Women Health*, 55(3):353-365.

34. Angelini CR, Pacagnella RC, Parpinelli MA, Silveira C, Andreucci CB, Ferreira EC, et al. (2018). Quality of life after an episode of severe maternal morbidity: evidence from a cohort study in Brazil. *Biomed Res Int*, 2018:9348647.

35. The WHQOL Group (1998). The World Health Organization quality of life assessment (WHOQOL) development and general psychometric properties. *Soc Sci Med*, 46(12):1569-1585.

36. Loh J, Harms C, Harman B (2017). Effects of parental stress, optimism, and health-promoting behaviors on the quality of life of primiparous and multiparous mothers. *Nurs Res*, 66(3):231-239.

37. Mortazavi F, Mousavi SA, Chaman R, Khosravi A (2014). Maternal quality of life during the transition to motherhood. *Iran Red Crescent Med J*, 16(5):e8443.