Original article

Postpartum depression in Iraqi women: Identifying quality of life and self-regulatory behaviors

Entsar Hachim Muhammad[1*], Mohammed Abdulkreem Salim[2], Ali Abdulhussain Fadhil[3], Tawfeeq Alghazali[4], Mazin abdullateef alzubaidi[5], Israa Abed Jawad[6], Riyadh mohammed Mohsin[7], Nathera Hussin Alwan[8], Zahraa F. Hassan[9]

[1]*Department of Medical Laboratory Technics, AlNoor University College, Nineveh, Iraq*

[2] *Department of Nursing /Al-Manara College for Medical Sciences/ (Maysan)/Iraq*

[3]*College of Medical Technology/ Medical Lab techniques, Al-Farahidi University/Iraq*

[4] *College of Media, department of journalism/ The Islamic University in Najaf, Najaf, Iraq*

[5] *Department of anesthesia, Al-Mustaqbal University, Babylon, Iraq*

[6] *Department of Education/ Al-Nisour University College/ Baghdad/Iraq*

[7]*Department of Nursing /Mazaya university college Iraq*

[8]*Department of Nursing, Al-Zahrawi University College, Karbala, Iraq*

[9] *College of Dentistry, Al-Ayen University, Thi-Qar, Iraq*

Received: 08/06/2021 – **Accepted:** 12/12/2022

DOI: 10.15761/0101-60830000000479

ABSTRACT

Postpartum depression has been indicated as the most prevalent factor that impacts women's quality of life and behavioral conduct in Iraq. The effect of PPD is negative to mood swings, decreased productivity, loss of interest to perform different activities, and effects on behavior. As a result, exhaustion, frustration, and irritation are instilled among Iraqi women. The study entailed 350 mothers aged 1-24 weeks postpartum from different health centers in Iraq recruited through random purposive sampling. A quantitative research design has been used to conduct this study. After screening the incomplete or unclear responses, the finalized questionnaires were 303 that were later analyzed through SPSS and Amos. There has been a significant impact of PPD on quality of life and self-regulatory behaviors. This study adds greater theoretical significance to the growing body of literature regarding maternal issues and depression, which are also relevant to psychology. The practical insights are also obvious, which can contribute to women knowing the factors that affect their life quality and behaviors after childbirth so that they can take relative measures to minimize the negative impacts that affect their productivity, behaviors, and moods.

Muhammad E H et al / Arch Clin Psychiatry. 2022;49(5):110-117

Keywords: Quality of life, postpartum depression, Self-regulatory behaviors

Introduction

Childbirth is an integral part of a woman's life; usually, the symptoms of PPD can be noticed after four to 6 weeks of childbirth, like MDD. The signs of PPD include low mood energy. Feeling uselessness or infinite guilt, loss of concentration, anxiety, and suicidal thoughts. The frequency of PPD is different among geographical locations and ethnicity and discrimination against women. There are different scales to measure PPD in the screening method of frequency measurement[1]. According to the World Health Organization, maternal mental disorder, which affects women worldwide and can last up to a year after childbirth, is a severe public health issue because it can happen throughout pregnancy[2]. According to WHO estimates, ten percent of pregnant females and thirteen percent of females who delivered recently have a mental disorder. However, it is hypothesized that low-income countries experience a higher rate than high-income countries[2]. Maternal despair, which encompasses gynecological depression and PPD, is the most prevalent maternal mental disorder[3]. Maternal depression is frequently linked to a higher risk of suicide in developing countries, low self-confidence, low proceeds, a history of abuse, and substantial life changes. Maternal depression increases the likelihood of truncated natal heaviness, premature birth, and delayed reasoning expansion in children[4]. Even though prenatal and PPD harm mothers' operative equally, more research has been done on PPD than antenatal despair[1]. Antenatal depression is solitary of the most effective

Address for correspondence: Entsar Hachim Muhammad, Department of Medical Laboratory Technics, AlNoor University College, Nineveh, Iraq.
E-mail: entsarhachim@alnoor.edu.iq

indicators of PPD risk[5, 6]. Although prevalence rates of maternal depression are not fully known for overall nations in the Middle East, rates are higher here.

In Palestine, the frequency of PPD ranges from 14 to 19% from one week after giving birth to six months after, and unplanned pregnancy and high parity are risk factors for PPD[3]. According to Maharlouei et al. [7], 36% of moms in Iran experienced despair. According to Shwartz et al.[8], PPD prevalence among Jewish and Arab women in Israel was 10.3% from six weeks to six months. A greater incidence among Arab women is twenty-one percent than seven percent of Jewish females[7, 8]. PPD frequency in Turkey range from fourteen to forty-one percent[9]. PPD was shown to be 49% prevalent among Syrian refugees in Jordan, and symptoms were significantly correlated with recent immigration, low income, and a lack of social support[9, 10]. There is not much information available in Iraq about depression in women of childbearing age. The only thorough nationwide survey that has determined the frequency rates of mental illnesses in the nation is the 2006–2007 Iraq Mental Health Survey[7, 11]. According to this survey, the lifetime rate of depression is 4.9%, and the cumulative incidence of any mental disease problem is 19.5% among women. Low levels of education and experiencing divorce, widowhood, separation, and war were all linked to female depression[2].

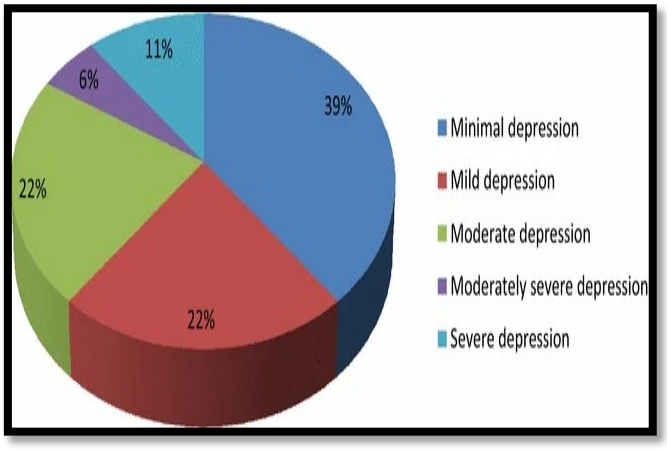

Figure 1 The percentages of different postpartum depressions in adult mothers of Ghana[12].

The frequency of motherly depression in Iraq has only been determined by two studies, which discovered that almost twenty-nine percent of women suffered depression within eight weeks of giving birth to a baby[13]. Corporal and erotic abuse, C-section birth, prior psychological illness, prior familial past of psychological illness, and high socioeconomic status are all risk factors for postpartum depression[12]. No research has attempted to determine Post-Partum Depression in Iraqi Women despite the significant incidence of parental depression in the postpartum period in Iraq. This study aims to determine the prevalence of prenatal depression among pregnant women seeking medical attention and the causes of maternal depression in Iraq. The following are the objectives of the research.

1)To assess the Impact of Post-Partum Depression on the Quality of Life in Iraqi Women.

2)To explore the Impact of Post-Partum Depression on women's Self-Regulatory Behaviors among women in Iraq.

Literature Review

Impact of postpartum depression on quality of life

Women's lives are affected by pregnancy and birth, referred to as transitional events, because they result in physical, mental, and social alterations. Various biological and mental factors, including the level of energy, the comfort of the woman, the well-being of the new infant, the effectiveness of the healthcare provided, and the support obtained, influence how well the mother adjusts to the postpartum duration, which begins at the time of birth and lasts for six weeks. Most women can adjust to the physical, mental, and social alterations that result from conception and birth, but some women do endure mild, medium or severe mental health issues. Among these issues, anxiety and depression especially may impact women during labor and the postpartum duration.

Connecting with their children and functioning may be tough for women with PPD. PPD is linked with poor interaction between mother and child and hence can have a significant negative influence on children, with long-term negative repercussions on their mental, emotional, and physiological results. It has also been demonstrated that the effects of depressing symptoms encompass numerous facets of mental health, interpersonal and role performance, and functional capacity, in addition to irregularities in mood, apprehension, weakness, dissatisfaction, aggravation, sleep difficulties, mental distress, and impaired mental symptoms[14, 15]. There are several factors that could trigger postpartum depression. Women who are regular smokers, who do a job, who had depression in the past, who are already stressed, who had several pregnancies or unplanned conception, who don't consider themselves good mothers, who receive less social support, who experience financial issues, who are less educated, not happily married, who experience violence from their spouse, who have job insecurity, or who had undesirable work interactions are more likely to develop postpartum depression than otherwise[16-18]. Quality of life is the health as perceived by the individual. Women experience major changes which trigger fears and worries that lower their quality of life even after a typical pregnancy and delivery. The quality of women's lives further declines when significant issues like depression or difficult pregnancies and deliveries are added to this cycle.

QOL is crucial for women's mental health both throughout maternity and after giving birth[15, 18-20]. For the mother's and the baby's health, early detection and treatment of postpartum depression are crucial. A healthcare professional's identification of a mother's risk indicators for mental illness and mitigation of those risks' effects would enable the mother to have pleasant, fulfilling experiences that would enhance the bonds within the family and improve her quality of life during this time[21].

H1: Postpartum depression has a significant impact on the quality of life

Impact of postpartum depression on self-regulatory behavior

Without considering the various methods by which people attempt to regulate their own ideas, feelings, and behaviors, it is impossible to properly comprehend the nature and effects of human conduct. The mechanisms through which humans originate, sustain and regulate their own thoughts, actions, or feelings with the aim of achieving a preferred end or averting an

undesirable one are referred to as self-regulation within the field of psychology[22]. A wide variety of mechanisms associated with the self-regulation of behavior are disrupted in people who have medical or covert signs of depression, in addition to changes in their mental or emotional functions. Among these dysfunctions are perfectionistic goal setting, difficulties in the sudden commencement of actions and work techniques, diminished method behavior, diminished responsiveness to rewarding or punishing results, abnormal changes in the ability to respond to negative responses, modified objective or work disengagement, ruminative self-focus, as well as troubles with regulating emotions. Additionally, it causes an unfavorable shift in the way that energy is utilized, increasing or decreasing cardiovascular responsiveness while doing mental activities. According to studies, self-regulation issues seen in depressive patients are not always a sign of a general lack of drive. They instead highlight a dysfunctional change of energy activation[23]. Ruminative adaptation, which has been strongly associated with depression, is another dysfunctional emotion-regulating technique used in reaction to depressive symptoms and unpleasant feelings or to physical problems. Rumination about one's bad mood on a regular basis has been proven to indicate the onset of depression and to be related to the intensity and progression of signs of depression as well as psychosocial performance. Distractive coping is described as deliberately diverting attention aside from unpleasant sensations and thoughts and toward pleasurable or neutral thinking and activities, projecting a more manageable path of depression.

According to Millgram's research, people with depression not only exhibit more defective emotion-regulatory techniques but also direct their attention to situations that can help them sustain their melancholy state. Therefore, in addition to general training in affective regulation, rumination could be a significant area of focus for psychotherapies in depressive episodes, proposing therapeutic strategies like those used to treat anxiety symptoms to assist depressed patients in both addressing their depressive beliefs and aiding in disengagement from concerning mechanisms. Alexithymia is of great value in depression therapy, in addition to treating rumination. Alexithymia manifests with a significant frequency in depressive disorders. Therefore, additional research evaluating a wider spectrum of mood dysregulation during depressive episodes is required to see whether the deficiencies can be condensed to a smaller set of fundamental deficits that can be explicitly addressed in therapy[10, 24].

H2: Postpartum depression has a significant impact on self-regulatory behavior**.**

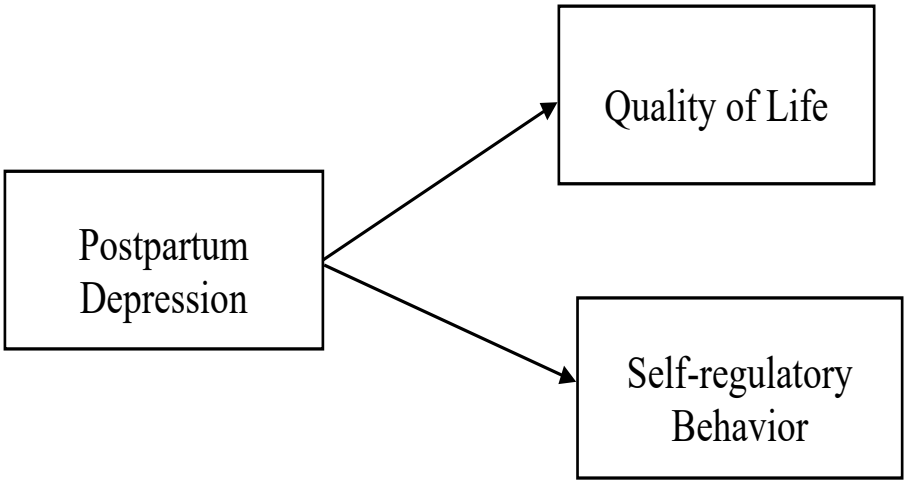

Figure 2: Theoretical Framework

Methodology

Method and Data collection

The design of the Investigation was quantitatively deductive. The method was selected because it allows for a fair assessment of patients' knowledge of post-partum depression, quality of life, and self-control practices. After being acquired via standardized surveys, the data was disseminated to mothers aged 1-24 weeks post-partum in different Health Centers in Iraq. The questionnaires were handed over to the receptionist of Health care centers. They were guided to distribute the questionnaires among the target audience willing to participate. And the data was collected from the reception after the completion of the decided time duration of the survey. Age and health demographics were included in the questionnaires. All participants supplied written consent before the study's start and received assurances that the data they submitted would be considered confidential. The researcher did not require any details that could be utilized to recognize the respondents to preserve the ethical obligation of confidentiality.

Sample

This study was based on a quantitative cross-sectional design and was conducted on women in Iraq. The data was collected from 350 women aged 1-24 weeks post-partum who had

experienced post-partum depression from different Health centers in Iraq. The response rate was 86.5% (303/350).

Sample Size

While Kline [25] contends that 200 or more samples are needed to adopt SEM, several studies have recommended sampling between 250 and 350 for more accurate results [26]. The study's chosen model is appropriate in both scenarios. 303 people were included in the study's sample.

Quality of Life

Quality of life (QOL) is a multifaceted notion that includes critical aspects like overall fitness, mental health, social interactions, economic conditions, personal views, and connections to essential environmental characteristics. There are numerous general tools available to assess QOL. One of the most well-known tools for comparing QOL across cultures is the WHOQOL-BREF, accessible in more than 40 languages. It is a broad notion intricately influenced by an individual's psychological and physical well-being, degree of freedom, and social connections, as well as their interactions with critical elements of their surroundings [27]. 6 items were selected for the current study.

Postpartum depression

Women should be aware of how their quality of life (QOL) is impacted by post-partum depression because they go through many biological, social, and emotional changes at this time. In this course, the QOL assists caretakers in enhancing the health of pregnant women and babies and assisting women in assessing their post-partum status. The survey was divided into three parts. The first component of the questionnaire contained demographic data, and the second and third sections, the HRQOL score (SF-12) and the Edinburgh Postnatal Depression Scale, correspondingly [27]. Seven items were selected for this purpose.

Self-regulatory behavior

A range of diverse cognitive capacities makes up conscience, including impulsive and emotional restraint, self-direction of thought and behavior planning, self-reliance, and ethically aware behavior. The respondents were asked to rate 10 items on the checklist based on a 5-point Likert scale [28].

Statistical Analysis

AMOS was employed to assess the direct and indirect associations between the variables. To assess the respondents' demographics, the researcher used SPSS.

Results

Demographic characteristics of respondents

The demographic characteristics hold great significance in any research as it indicates the fluctuation in terms of gender, age, education, and other demographic features of respondents. In this research, the data has been collected from women who undergo postpartum depression. A total of 303 responses were observed after screening the incomplete and ambiguous questionnaires. The fluctuation has been observed in terms of the age of such women. Ninety women belonged to the age of fewer than 25 years, 129 women were from the age group of 26-30 years, 69 women had an age of 31-35 years, and 15 women were a bit older, which indicated their age to be more than 35 years.

Descriptive Summary

Table 1 illustrates the results of the descriptive summary, which is done to estimate the outliers and confirm normality in responses. There were 303 responses attained, and the mean statistics indicated between 3.2-3.3, which highlights the response in terms of the agreement among respondents. The mean value for PPD is 3.2, Q.L. is 3.3, and for SRB, the mean value is 3.3. The cut-off value for skewness falls between -1 and +1. The results indicated that skewness for the variables is -.374 for PPD, -.303 for Q.L., and -.288 for self-regulatory behaviors. It means that there is no outlier in the data that interrupts it.

Table 1 Descriptive characteristics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
PPD	303	1.00	5.00	3.2636	1.04765	-.374	.140
QL	303	1.00	5.00	3.3289	1.21016	-.303	.140
SRB	303	1.00	5.00	3.3139	1.02428	-.288	.140
Valid N (listwise)	303						

PPD= Post-Partum Depression, QL= Quality of life, SRB= Self-regulatory behaviors

Exploratory factor Analysis

There is a chance of a common biased method when the entire set of constructs is assessed through a survey. For the deletion of the CMB threat, this research has undertaken the appliance of confirmatory factor analysis. The researchers have declared CFA as a verifiable procedure. The EFA is measured as a genuine process for the CMB assessment and accounts for both the mechanical and dimension models. The usage of EFA is also measured appropriately when the researcher wants to assess the quantity potency of the variables, the suggestion of a supplementary EFA test can be reflected without making an allowance for the prevailing theoretical contingent of the variables.

Table 2 KMO & Bartlet

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.904
Bartlett's Test of Sphericity	Approx. Chi-Square	13203.736
	Df	335
	Sig.	.000

This research has adopted the maximum likelihood technique for factor abstraction. The variables that demonstrate low loading values have been removed/eliminated in this practice. The integration of this test thus established that all the variables

meaningfully subsidized variance, and the three variables grouped characterized postpartum depression, self-regulatory behaviors, and quality of life. The researcher also undertook the KMO and Bartlett standards for the research model and acknowledged that the sample data was operative and exact. The test offerings sample accurateness and resemble competently in variance involvement.

Rotated Component Matrix

Table 3: Factor Loadings

	1	2	3
PPD1		.821	
PPD2		.782	
PPD3		.749	
PPD4		.749	
PPD5		.741	
PPD6		.805	
PPD7		.802	
QL1	.845		
QL2	.862		
QL3	.861		
QL4	.862		
QL5	.862		
QL6	.862		
SRB1			.853
SRB2			.859
SRB3			.661
SRB4			.605
SRB5			.630
SRB6			.652
SRB7			.621
SRB8			.771
SRB9			.832
SRB10			.782

PPD= Post-Partum Depression, QL= Quality of life, SRB= Self-regulatory behaviors

Table 3 indicates the results for factor loading as three variables were involved in this research: postpartum depression, self-regulatory behaviors, and quality of life. The minimum suppressed value indicated in the table is .06. For the three of the constructs, the rotated component matrix yields significant results as there is no cross-loading or double-loading in variable items. The constructs item appears in their respective column. For PPD, seven items appeared in the second column of table 4, and there were ten items included for self-regulatory behaviors that appeared in column three. For the quality of life, six items were included that appeared in column 1.

Convergent and Discriminant Validity

Table 5: Validity of Constructs

	CR	AVE	MSV	PK	MS	A
PPD	0.880	0.666	0.464	**0.865**		
QL	0.813	0.682	0.438	0.748	**0.840**	
SRB	0.800	0.672	0.477	0.638	0.724	**0.793**

PPD= Post-Partum Depression, QL= Quality of life, SRB= Self-regulatory behaviors

The validity of constructs has been estimated through discriminant and convergent validity. The internal consistency of scales has been estimated through convergent validity and evaluated through two indicators of Average variance extracted and composite reliability. The threshold value for composite reliability has been indicated as 0.7 and above, whereas the range defined for estimating the average variance extracted is 0.5. The above table results report that for the three constructs of this study, i.e., P.D., SRB, and Q.L., the convergent validity has been indicated in the model. The values of C.R. and AVE follow the defined phenomenon. MSV values are smaller than AVE. Discriminant validity, however, demonstrates that the variables not theoretically related are not found to be correlated. For the three constructs, the discriminant validity has been indicated to be presently depicted in bold figures. The inter-construct correlation is lesser than the intra-construct correlation. There was a significant association among similar constructs, and no other construct passably enlightened the variable's phenomenon. Validity results thus indicated to be significant for this research.

Confirmatory factor analysis

The confirmatory factor analysis has been used to confirm the

model's fitness. The measurement model was acceptable, as indicated in tables 4, 5, and 6, as the tables exhibited sample sufficiency, acceptability, adequacy, goodness of fit, and validity. Table 6 reported that CMIN/df was 2.544, GFI =0.821, IFI= 0.931, and RMSEA=0.052. Neither criterion considered for the analysis validated a lack of fitness; therefore, the measurement model in figure 2 is appropriate, which directed that structural equation modeling can be performed.

Table 6: Model Fit Indices

CFA Indicators	CMIN/DF	GFI	IFI	CFI	RMSEA
Threshold Value	≤ 3	≥ 0.80	≥ 0.90	≥ 0.90	≤ 0.08
Observed Value	2.544	0.821	0.931	0.958	0.052

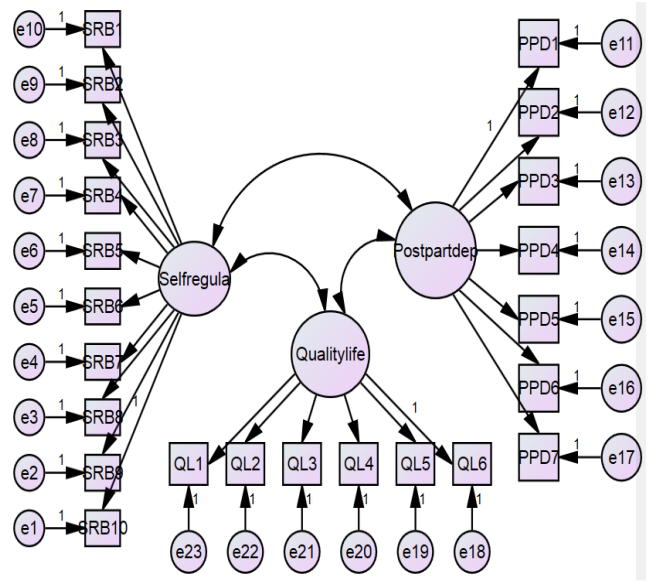

Figure 2: CFA

Structural Equation modeling

Structural equation modeling is a statistical technique used for testing the status of formulated hypothesis. With sufficient respondents, the researchers use SEM to analyze their data and draw final results. The hypothetical relationships are conveniently set up and tested through SEM. The explicit evaluation of measurement error can be attained, the estimation of unobserved variables through the observed variables can be performed, and model testing can be done where a structure can be imposed and evaluated to fit the data. In this research, two hypotheses were formulated, which assessed the impact of postpartum depression on quality of life and self-regulatory behaviors. The results in table 7 reported the acceptance of both hypotheses because the p values are 0.03 and 0.02, respectively, which are less than the threshold value "less than or equal to 0.05. Figure 3 exhibits the results of the Impact of PPD on Q.L. By increasing one unit of PPD, a 71 percent effect on Quality of life can be observed. The second relationship was also observed to have a 76 percent effect on SRB by increasing one unit of PPD. So, the results are significant.

Table 7: Structural Equation Modeling

	Path		Estimate	S.E.	P
QL	<---	PPD	0.71	.067	0.03
SRB	<---	PPD	0.76	.058	0.02

PPD= Post-Partum Depression, QL= Quality of life, SRB= Self-regulatory behaviors

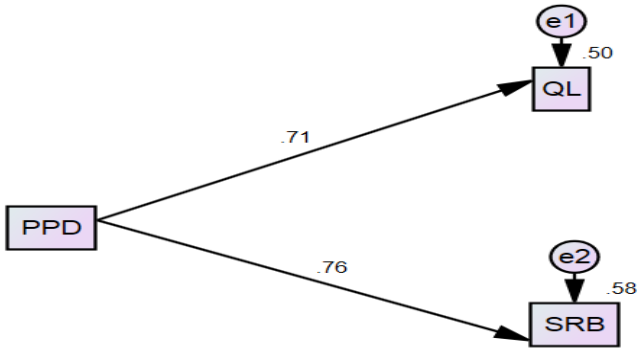

Figure 3: SEM

Discussion

The current study assessed the impact of postpartum depression on quality of life and self-regulatory behavior among Iraqi women. As per our objective, we analyzed the effect of postpartum depression on quality of life and found a significant impact of postpartum depression on the quality of life among Iraqi women. Similar to our findings, Sadat et al.[19] compared the quality of life among women with PPD and women without PPD and found that PPD plays a crucial role in women's physical and mental ability, causing a decline in the quality of life. The research evaluated PPD and quality of life among Iranian women two and four months after giving birth. Da Costa et al.[29] revealed that the physical and mental capacity of women with postpartum depression is significantly lower among Canadian women. The study elaborated that mental and physical scores were reduced in women with PPD. The work of Yoruk et al.[16] is in line with our study's results showing that the quality of life in terms of mothers' social and psychological condition is negatively affected by PPD. The study specifically pointed out that women who already have a higher depression risk scored lower on social scores and physiological health scales. Results from French research also elaborated that among 150 women after delivery, the quality of life was significantly reduced due to women's depressive symptoms. Women reported physical discomforts such as headaches and breast pain, and headaches and experienced mental health decline by feeling tired, sad, and anxious. The postpartum period for mothers can be challenging due to a number of changes during pregnancy and postpartum, including emotional and societal alteration[30], and there is an association between PPD and lower quality of life in terms of the mental and physical well-being of women[31]. Therefore, postpartum women with depression have a decline in mental and physical quality of life[15], and impaired quality of life has serious maternal consequences for both the mother and newborn baby[11]. A study in Korea investigated the effect of PPD and fatigue on the quality of life among 130

women between 1st to 3rd weeks postpartum and found that increase in fatigue and depressive symptoms reduced the quality of life. Tiredness and PPD were found to be positively related.[6]

Similarly, we evaluated the impact of postpartum depression on self-regulatory behavior among Iraqi women. Our finding's revealed that PPD significantly impacts self-regulatory behavior among Iraqi women. Regulation of emotion helps postpartum mothers to acknowledge and regulate their emotional state[32]. Similarly, Bridget et al.[33] confirm our hypothesis that PPD is impacted by self-regulatory behavior, as women with self-regulatory mechanisms can adjust the effect of stress and anxiety on maternal caregiving responsibilities. Research has discussed that depressive and anxiety symptoms hamper maternal self-regulation, which in turn disrupts maternal care, causing aggravation of women's anxiety symptoms[34]. However, studies have shown that self-regulatory behavior is affected by genetics which affects women with PPD by activating during stressful situations[33]. Postpartum mothers with self-regulatory behavior can adjust their reactions when faced with stress during parenting and nurturing newborns[35, 36]. Studies have shown that people with depression have reduced cognitive ability to regulate their emotions and decreased capability of developing new adaptative strategies for regulating emotional feelings[37]. Furthermore, depression causes women to resort to suppression strategies and use rumination to regulate their emotions [38]. Therefore, the finding of our study is in line with previous research. Babore et al.[36] confirmed that postpartum mothers are unable to regulate their emotions, causing them to be in a negative cycle of emotions when they are unable to manage parenting stress. They cannot adapt new strategies with reduced cognitive ability.

Conclusion

The current study assessed the impact of postpartum depression on the quality of life and self-regulatory behavior among Iraqi women. The effect of postpartum depression was studied by collecting data from a sample of 350 Iraqi women from different health centers in Iraq. The study accepted the hypothesis that PPD in Iraqi women significantly impacts the quality of life. Depressive and anxiety symptoms cause physical and mental strain leading to deteriorated quality of life. Research also confirms that discomfort experienced by postpartum women in terms of physical health includes headaches, back pain, etc. [15]. Depression and anxiety cause problems in conducting day-to-day tasks. Furthermore, our study showed that self-regulatory behavior is influenced by PPD in Iraqi women. As previous research confirms that self-regulatory mechanism helps to adjust emotional reactions during distressful situations, depression can significantly lower the cognitive ability of postpartum mothers [37]. The results conclude that postpartum depression is a serious health concern among women. Health professionals should conduct comprehensive assessments of maternal discomfort, provide knowledge on preventive and therapeutic strategies to strengthen their self-regulatory behavior, manage maternal discomfort and improve the quality of life of Iraqi women with PPD. Additionally, healthcare policies aimed to increase psychological counselling must be implemented that focus on boosting the quality of life of postpartum women by providing them support during pregnancy, childbirth and postpartum.

Practical Implications

The findings of the study may contribute to future research on the importance of PPD among Iraqi women. The current research and future research will be helpful in providing knowledge on PPD and its effect on the quality of life among women to create awareness and promote effective PPD management. While the study has provided theoretical knowledge, the research also has significant practical implications. It is critical for healthcare authorities to organize educational programs to improve the quality of life and self-regulation behavior of women with PPD. Healthcare practitioners must support pregnant women through instructive coaching programs that will enhance mothers' knowledge and skills, leading to a reduced risk of PPD. Hospitals should adopt effective prevention and interventive measures by educating their nurses and healthcare staff who come in contact with pregnant and postpartum women to improve their physical and mental well-being.

Limitations and future research recommendations

The study has certain limitations that should be highlighted. The study did not consider the presence of prenatal depression among the sample of Iraqi women. Furthermore, as a psychiatric diagnostic criterion was not utilized, the level of symptoms of depression was discreet. The sample consists of Iraqi women; therefore, the findings cannot be generalized to women in other countries. Furthermore, the study design of our research was cross-sectional, which makes it difficult to analyze the behavior over time and render a causation relationship. Future studies can incorporate prenatal depression, history of stressful events, and psychiatric evaluation for the applicability of the results to clinical populations.

References

[1] M. W. O'Hara and K. L. Wisner, "Perinatal mental illness: definition, description and aetiology," *Best practice & research Clinical obstetrics & gynaecology*, vol. 28, no. 1, pp. 3-12, 2014.

[2] N. Atif, K. Lovell, and A. Rahman, "Maternal mental health: The missing "m" in the global maternal and child health agenda," in *Seminars in perinatology*, 2015, vol. 39, no. 5: Elsevier, pp. 345-352.

[3] E. Ugwa, "Nutritional practices and taboos among pregnant women attending antenatal care at general hospital in Kano, Northwest Nigeria," *Annals of medical and health sciences research*, vol. 6, no. 2, pp. 109-114, 2016.

[4] A. Rahman, V. Patel, J. Maselko, and B. Kirkwood, "The neglected 'm'in MCH programmes–why mental health of mothers is important for child nutrition," *Tropical Medicine & International Health*, vol. 13, no. 4, pp. 579-583, 2008.

[5] G. Daglar, D. Bilgic, and S. Aydın Özkan, "Depression, anxiety and quality of life of mothers in the early postpartum period," *International Journal of Behavioral Sciences*, vol. 11, no. 4, pp. 152-159, 2018.

[6] S.-Y. Choi, H.-J. Gu, and E.-J. Ryu, "Effects of fatigue and postpartum depression on maternal perceived quality of life (MAPP-QOL) in early postpartum mothers," *Korean Journal of Women Health Nursing*, vol. 17, no. 2, pp. 118-125, 2011.

[7] N. Maharlouei, H. Alibeigi, A. Rezaianzadeh, P.

Keshavarz, H. R. Shahraki, and H. Nemati, "The relationship between maternal mental health and communication skills in children in Shiraz, Iran," *Epidemiology and health,* vol. 41, 2019.

[8] N. Shwartz, I. Shoahm-Vardi, and N. Daoud, "Postpartum depression among Arab and Jewish women in Israel: ethnic inequalities and risk factors," *Midwifery,* vol. 70, pp. 54-63, 2019.

[9] H. Tambağ, Z. Turan, S. Tolun, and R. Can, "Perceived social support and depression levels of women in the postpartum period in Hatay, Turkey," *Nigerian Journal of Clinical Practice,* vol. 21, no. 11, pp. 1525-1530, 2018.

[10] Y. Millgram, J. Joormann, J. D. Huppert, and M. Tamir, "Sad as a matter of choice? Emotion-regulation goals in depression," *Psychological science,* vol. 26, no. 8, pp. 1216-1228, 2015.

[11] F. Mousavi and P. Shojaei, "Postpartum Depression and Quality of Life: A Path Analysis," (in eng), *Yale J Biol Med,* vol. 94, no. 1, pp. 85-94, Mar 2021.

[12] R. Anokye, E. Acheampong, A. Budu-Ainooson, E. I. Obeng, and A. G. Akwasi, "Prevalence of postpartum depression and interventions utilized for its management," *Annals of general psychiatry,* vol. 17, no. 1, pp. 1-8, 2018.

[13] H. M. Ahmed, S. K. Alalaf, and N. G. Al-Tawil, "Screening for postpartum depression using Kurdish version of Edinburgh postnatal depression scale," *Archives of gynecology and obstetrics,* vol. 285, no. 5, pp. 1249-1255, 2012.

[14] M. E. Gerbasi *et al.*, "Achieving clinical response in postpartum depression leads to improvement in health-related quality of life," *Current Medical Research and Opinion,* vol. 37, no. 7, pp. 1221-1231, 2021.

[15] M. Papamarkou, P. Sarafis, C. P. Kaite, M. Malliarou, A. Tsounis, and D. Niakas, "Investigation of the association between quality of life and depressive symptoms during postpartum period: a correlational study," *BMC women's health,* vol. 17, no. 1, pp. 1-9, 2017.

[16] S. Yörük, A. Açıkgöz, H. Türkmen, and T. Karlıdere, "The prevalence of postpartum depression and the correlation of perceived social support and quality of life with postpartum depression: A longitudinal study," 2020.

[17] M. Almuqbil *et al.*, "Postpartum depression and health-related quality of life: a Saudi Arabian perspective," *PeerJ,* vol. 10, p. e14240, 2022.

[18] F. Mousavi and P. Shojaei, "Focus: Preventive Medicine: Postpartum Depression and Quality of Life: A Path Analysis," *The Yale Journal of Biology and Medicine,* vol. 94, no. 1, p. 85, 2021.

[19] Z. Sadat, M. Abedzadeh-Kalahroudi, M. K. Atrian, Z. Karimian, and Z. Sooki, "The impact of postpartum depression on quality of life in women after child's birth," *Iranian Red Crescent Medical Journal,* vol. 16, no. 2, 2014.

[20] R. Feki, I. Feki, D. Trigui, I. Baâti, R. Sallemi, and J. Masmoudi, "Impact of postpartum depression on quality of life," *European Psychiatry,* vol. 41, no. S1, pp. s901-s902, 2017.

[21] S. Kolovos, A. Kleiboer, and P. Cuijpers, "Effect of psychotherapy for depression on quality of life: meta-analysis," *The British Journal of Psychiatry,* vol. 209, no. 6, pp. 460-468, 2016.

[22] T. J. Strauman and K. M. Eddington, "Treatment of depression from a self-regulation perspective: Basic concepts and applied strategies in self-system therapy," *Cognitive therapy and research,* vol. 41, no. 1, pp. 1-15, 2017.

[23] K. Brinkmann and J. Franzen, "Depression and self-regulation: A motivational analysis and insights from effort-related cardiovascular reactivity," in *Handbook of biobehavioral approaches to self-regulation*: Springer, 2015, pp. 333-347.

[24] J. Bailer, M. Witthöft, M. Erkic, and D. Mier, "Emotion dysregulation in hypochondriasis and depression," *Clinical psychology & psychotherapy,* vol. 24, no. 6, pp. 1254-1262, 2017.

[25] R. B. Kline, *Principles and Practice of Structural Equation Modeling*. Guilford Publications. New York, 2015.

[26] R. Kline, "Principles and practice of structural equation modeling Guilford," *New York,* vol. 366, 2005.

[27] Z. Vakili, A. R. Mohamad, and M. A. Vakili, "A quantitative study of quality of life (QOL) on postgraduate students in Universiti Sains Malaysia," *Caspian Journal of Applied Sciences Research,* vol. 1, no. 7, pp. 28-32, 2012.

[28] A. Dan, "Supporting and developing self-regulatory behaviours in early childhood in young children with high levels of impulsive behaviour," *Contemporary Issues in Education Research (CIER),* vol. 9, no. 4, pp. 189-200, 2016.

[29] D. Da Costa, M. Dritsa, N. Rippen, I. Lowensteyn, and S. Khalife, "Health-related quality of life in postpartum depressed women," *Archives of women's mental health,* vol. 9, no. 2, pp. 95-102, 2006.

[30] J. McGarry, H. Kim, X. Sheng, M. Egger, and L. Baksh, "Postpartum depression and help-seeking behavior," *Journal of midwifery & women's health,* vol. 54, no. 1, pp. 50-56, 2009.

[31] H. Maita, T. Kobayashi, and H. Osawa, "Postpartum depression and health related quality of life: a necessary assessment," *Int J Fam Commun Med,* vol. 1, no. 1, pp. 11-17, 2017.

[32] H. Li *et al.*, "Mood instability during pregnancy and postpartum: a systematic review," *Archives of Women's Mental Health,* vol. 23, no. 1, pp. 29-41, 2020/02/01 2020, doi: 10.1007/s00737-019-00956-6.

[33] D. J. Bridgett, N. M. Burt, E. S. Edwards, and K. Deater-Deckard, "Intergenerational transmission of self-regulation: A multidisciplinary review and integrative conceptual framework," *Psychological bulletin,* vol. 141, no. 3, p. 602, 2015.

[34] C. Liston, B. S. McEwen, and B. Casey, "Psychosocial stress reversibly disrupts prefrontal processing and attentional control," *Proceedings of the National Academy of Sciences,* vol. 106, no. 3, pp. 912-917, 2009.

[35] S. M. Dinni, "Predictors of postpartum depression: the role of emotion regulation, maternal self-confidence, and marital satisfaction on postpartum depression," *Jurnal Psikologi,* vol. 47, no. 3, pp. 220-238, 2020.

[36] A. Babore *et al.*, "The role of depression and emotion regulation on parenting stress in a sample of mothers with cancer," (in eng), *Support Care Cancer,* vol. 27, no. 4, pp. 1271-1277, Apr 2019, doi: 10.1007/s00520-018-4611-5.

[37] S. Diop, L. Turmes, C. Specht, S. Seehagen, G. Juckel, and P. Mavrogiorgou, "Capacities for meta-cognition, social cognition, and alexithymia in postpartum depression," *Psychiatry Research,* vol. 309, p. 114430, 2022.

[38] L. Pedro, M. Branquinho, M. C. Canavarro, and A. Fonseca, "Self-criticism, negative automatic thoughts and postpartum depressive symptoms: the buffering effect of self-compassion," *Journal of Reproductive and Infant Psychology,* vol. 37, no. 5, pp. 539-553, 2019.