

Relationship between quality of life and postpartum depression among women in North-Central, Nigeria

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Abstract

Background: Postpartum depression is a problem of public health interest and impacts negatively on the perception of quality of life of sufferers. Quality of life (QoL) as an outcome measure, is scantily used on women with postpartum depression in Nigeria. The current study was designed to assess the QoL of women with postpartum depression (PPD) in a tertiary hospital in North-Central, Nigeria.

Method: A two-stage cross sectional procedure was used to recruit 550 participants 6 to 8 weeks postpartum in Jos, North-central, Nigeria. The Edinburgh Postnatal Depression Scale (EPDS), the World Health Organization Quality of Life-BREF-26 (WHOQoL-BREF-26) questionnaire and the Depression Module of the Structured Clinical Interview for DSM-IV axis I Diagnosis (SCID) were used.

Results: The studied participants were 531 out of which 21.8% with postpartum depression had significantly poor perception in all the four domains of the WHOQoL-BREF-26 i.e., in the physical health ($p < 0.001$), psychological ($p < 0.001$), social relationships ($p < 0.001$) and environmental ($p < 0.001$)

domains. On the whole, the overall rating of quality of life ($p = 0.002$) and satisfaction with general health ($p < 0.001$) were also perceived to be poor when compared to those without depression. However, regression model analysis showed that the presence of postpartum depression in a participant predicts a significant negative perception on physical and environmental domains of quality of life, but a positive prediction on the general satisfaction with health.

Conclusion: Postpartum depression as a disorder of public health importance impacts on the perception of quality of life of women who suffer from it. Early detection and treatment will improve the quality of life of women with postpartum depression.

Key words: Quality of life, WHOQoL-BREF-26, Postpartum Depression, prevalence, North-Central, Nigeria.

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Introduction

Quality of life refers to “peoples' perceived emotional, social, and physical wellbeing and their ability to function in the ordinary tasks of living”¹. Quality of life can also be used to evaluate the general wellbeing of individuals and societies¹. It is not synonymous with standard of living which is based mainly on income, but as a function of wealth, employment, environment, recreation and leisure, health (both physical and mental), education and social integration or relationship²

Depression may have a profound consequence on the quality of life of an individual. It may reduce the

quality of life of the individual subjectively or objectively³. A number of studies have examined quality of life in patients with depressive disorders, either occurring as a single entity or co-morbid with medical disorders^{4,6}. Studies to evaluate the QoL among women with depressive symptoms following childbirth found that mothers with significant depressive symptoms had significantly poorer physical and mental health-related quality of life^{7,6}.

Two studies on QoL of women with postpartum depression from the developed world showed a negative correlation between depression and quality of life. De Tychey and colleagues reported that mothers with PPD had severe impairment on all the sub-scales of SF-36, including both the physical and mental component⁸. A study from the United States on two groups of women with and without postpartum depression at sixth through 26th weeks postpartum reported that functional status of quality of life of women with PPD were lower when compared with women without PPD⁹. The functional status was defined by several items including personal care, care of infant, care of household, job activity and social activity⁹.

In Nigeria, most of the studies on QoL were conducted among participants with chronic kidney

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disease and depression¹⁰, diabetes mellitus and depression¹¹ and comparing QoL between schizophrenia and affective disorders¹². Others were carried out on participants with Human Immuno-deficiency virus (HIV) infection/ AIDS and depression¹³ and schizophrenia and diabetes mellitus¹⁴. However, there is dearth information concerning the association between QoL and postpartum depression in women in North-central, Nigeria.

Therefore, this study was designed to assess the relationship between quality of life and postpartum depression in selected North-Central Nigerian women.

Materials and Methods

Study design: A cross-sectional study involving 550 women at 6 to 8 weeks postpartum attending the postnatal and children's welfare clinic.

Study setting: The study was carried out at the Postnatal and the Children's Welfare Clinic of Jos University Teaching Hospital, North-central Nigeria. The two units were used in order to recruit women that came to access either of the clinics. The postnatal unit provides services to women who had delivered, while the children's welfare clinic provides essential care including immunization services to children less than 5 years of age.

Study Population

All women who were 6-8 weeks postpartum and attending either the postnatal and/ or children's welfare clinics between September 2012 and January 2013.

Sample size determination

We estimated that using a power of 95% 273 would be needed for our precision of 5%. We interviewed 550 to accommodate the possibility of non-responses and poorly completed questionnaires.

Sampling method

Systematic sampling method was used to select participants who were 6 to 8 weeks postpartum attending the various clinics. All participants who met the inclusion criteria on each clinic day were sampled until the target sample size was achieved.

In the first stage of the daily recruitment, informed consents were obtained from the participants. Thereafter, the socio-demographic, the Edinburgh Postnatal Depression Scale (EPDS) and the World Health Organization Quality of Life-Bref-26 (WHO QoL-Bref-26) questionnaires were administered to the consenting eligible women. The second stage involved the administration of the Structured Clinical Interview for DSM-IV AXIS I Disorders (SCID) to make diagnosis of depression.

Ethical consideration

Ethical approval was obtained from the joint Ethical Committee of Jos University Teaching Hospital and University of Jos. Permission was also sought from the various heads of the Departments/ clinics and both written and thumb print informed consent was received in line with "Helsinki Declaration" for study on human subject.

Instruments

Socio-demographic Questionnaire: The socio-demographic questionnaire designed by the researchers was semi-structured to obtain the socio-demographic and clinical obstetric characteristics of the women including occupational status, marital status, educational status. The clinical variables such as modes of delivery, complications during delivery, past psychiatric history were asked and so is the number of children before current birth and their gender. New mother and spousal's expected gender of baby were also asked.

The Edinburgh Postnatal Depression Scale (EPDS): This is a 10-item, self-rating screening questionnaire. When administered 6 weeks postpartum, it has high specificity and sensitivity in detecting postnatal depression^{15,16}. Edinburgh Postnatal Depression Scale has good psychometric properties and was validated in a number of studies in Nigeria^{17, 18}. The EPDS in itself cannot confirm diagnosis of depression but at a threshold score of 12, it has a specificity of 92.5% and a sensitivity of 88% in a large community study¹⁶ and this informed the choice of 12 as a cut-off point for the study. Any participants the score 12 and above is screened for postpartum depression and recruited for the second stage for administration of a diagnostic tool. The questionnaire rates the intensity of depressive symptoms present within the previous seven days. It takes less than five minutes to complete. The Hausa version through the back translation was adopted and used for this study for women who do not understand English. Each item was scored on a 4-point Likert scale (0-3).

The World Health Organization Quality of Life-BREF-26 (WHOQoL-BREF-26): This is a 26-item questionnaire. A shorter version of the World Health Organization Quality of Life-100 (WHOQoL-100). It contains a total of 26 questions made up of one item from each of the 24 facets contained in the WHOQoL-100 and 2 items from the overall rating of quality of life and general satisfaction with health. It is a self-administered questionnaire. It measures the responsiveness of patients to illness^{19,20}. It has a cross-cultural application and has been validated in the Yoruba speaking areas of Nigeria²¹ and in other health related quality of life studies in Nigeria²¹⁻²⁴ and sub-Saharan

Africa²⁰. The WHOQoL assessment assists clinicians in making judgment about areas in which a patient is most affected by disease and also in making treatment decisions. The QoL scale profile has 4 domains; Physical health, Psychological, Social relationships and the Environment. Each of these domains has 5 options to which an individual is expected to respond on a 5-point likert scale. The mean scores of each of the four domains denote an individual's perception of their QoL in each domain. Domain scores are scaled in a positive direction such that higher scores denote a higher QoL. There are two items examined separately: question 1 (facet 1 or Q1) asks about an individual's overall perception or rating of quality of life and question 2 (facet 2 or Q2) asks about an individual's overall general satisfaction with health. The mean score of items within each domain was used to calculate the domain score. Mean scores were then multiplied by 4 in order to make domain scores comparable with scores used in the WHOQoL-100. The manual method for calculating individual scores was adopted for this study. Raw scores were converted to transformed scores using the 'transformation method'. The transformation method converts domain scores to a 0-100 scale. The mean scores of the transformed scores were used for comparing the quality of life between women with postpartum depression and those without.

The Structured Clinical Interview for DSM-IV AXIS I Disorders (SCID): Structured Clinical Interview for Diagnostic and Statistical Manual- IV-AXIS-1 Disorders (SCID) is a semi-structured instrument that can be used as part of a normal assessment procedure to confirm diagnosis in research or screening 'as a systematic evaluation of a whole range of medical states' and for training of mental health personnel^{25,26}. The Module for Depression on SCID provides diagnosis according to or described in the 4th edition of DSM-IV and was used in this study. The SCID has been used to diagnose depression in a number of studies in Nigeria^{27,28}. Participants with five or more symptoms of depression in the depression module of the SCID are confirmed or diagnosed to have major depression in the postpartum period. There is good evidence that the instrument is highly reliable in a study by Raskind et al., with Kappa values range between 0.72 and 0.79²⁹.

For participants who cannot speak English, the Hausa version through the back translation of the EPDS and WHOQoL-BREF-26 were used because Hausa is a common Language spoken in the study area.

Analysis of Data

The Statistical Package for Social Sciences (SPSS) VERSION 20.0 (SPSS 20) for Windows software³⁰ was used to analyze the data. Descriptive Statistics such as

mean and standard deviation were used to summarize continuous variables while the t-test and ANOVA were used to compare the differences in mean scores of QoL. A regression model analysis was used for inferential statistics. The P-value of <0.05 was used as the criterion for statistical significance in all the statistics.

Results

Five hundred and fifty (550) participants were recruited for the study, out of whom 531 (96.5%) women completed the questionnaires. Using the weighting method, to calculate the prevalence rate 116 (21.8%) of the participants were diagnosed with postpartum depression (PPD).

Table 1: The Socio-demographic Distribution of all Participants

Socio-demographic Variables	n=531	(%)
Age groups (years)		
18-25	190	35.8
26-35	315	59.3
36-45	26	4.9
Religion		
Christianity	180	33.9
Islam	323	60.8
Traditional*	28	5.3
Ethnicity		
Hausa	282	53.1
Igbo	53	10.0
Yoruba	39	7.3
Others**	157	29.6
Marital Status		
Single	13	2.4
Married	518	97.6
Level of Education		
No formal	10	1.9
Primary	93	17.5
Secondary	266	50.1
Tertiary	162	30.5
Occupational Status		
Employed	152	28.6
Unemployed	26	4.9
Apprentice	8	1.5
Student	20	3.8
Housewife	325	61.2
Place of Residency		
Urban	483	91.0
Rural	48	9.0
Types of Household		
living alone	25	4.7
Nuclear family	342	64.4
Extended family	164	30.9

*African traditional religion **Other ethnic groups residing in Plateau state e.g. Berom, Ngas, Mwaghavwel, Uhorobo etc

Socio-Demographic Characteristics of study Participants

The socio-demographic details of the participants as shown in Table 1, showed that the mean age of participants was 26.98±5.97 years, with an age range of 18 to 45 years. Islam is the most predominant religion (60.8%) among the participants. Five hundred and eighteen (97.6%) participants were married. Close to 81% of the study population had a minimum of secondary level of education. More than 61% were housewives while about 29% were gainfully employed.

Prevalence of Postpartum Depression Among Participants

Table 2 showed that 116 (21.8%) out of 531 participants had postpartum depression.

Table 2: Distribution of the Mean Scores of Quality of Life of Participants

Variables	All Participants (n=531) Mean± sd	Women with PPD (n=116) Mean± sd	Women without PPD (n=415) Mean± sd	t-test	p-value
Rating of quality of life (Q1)	4.05±0.56	2.91±0.73	4.08±0.50	3.06	0.002
Satisfaction with general health (Q2)	4.00±0.63	3.38±0.83	4.08±0.58	3.21	<0.001
Domain 1 (physical health)	69.79±13.30	58.96±18.56	72.83±9.37	11.12	<0.001
Domain 2 (psychological)	67.56±16.97	56.96±16.46	70.53±15.91	8.06	<0.001
Domain 2 (social relationships)	72.59±16.97	62.78±24.84	75.33±11.96	7.61	<0.001
Domain 4 (environmental)	62.50±13.19	52.78±16.04	67.77±10.11	12.25	<0.001

Table 3. Association between Overall Rating and Satisfaction with Health and Depression

Variables	Depression	No depression	Total	χ ²	df	p-value
Rating of quality of life						
Very poor	3 (100.0)	0 (0)	3			
Neither poor or good	28 (44.6)	35 (55.6)	63	28.62	2	<0.001*
Very good	85 (18.3)	380 (81.7)	465			
Satisfaction with health						
Very dissatisfied	6 (54.5)	5 (45.5)	11			
Neither dissatisfied or satisfied	33 (45.5)	40 (54.8)	73	31.06	2	<0.001
Very satisfied	77 (17.2)	370 (82.8)	447			

df-degree of freedom p-value<0.05- statistically significant
*Likelihood –ratio chi-square

Table 4: Relationship between significant variables of Quality of life- bref and Depression Status of participants: The Regression model coefficient

Model	R	R ²	Adjusted R ²	Std. error estimate	p-value		
1	0.536	0.288	0.279	0.381	<0.001		
Model	B	Unstandardized Std. Error	Standardized coefficient Beta	t	p-value	95% CI boundary boundary	
Rating of QoI	0.02	0.032	0.027	0.64	0.522	-0.042	0.082
Satisfaction with health	0.085	0.032	0.131	2.71	0.007	0.023	0.147
Physical domain of QoI	-0.011	0.002	-0.368	6.13	<0.001	-0.015	-0.008
Psychological domain of QoL	0.001	0.001	0.053	0.96	0.340	-0.001	-0.004
Social relationships domain of QoL	0.001	0.002	0.041	0.657	0.510	-0.002	-0.004
Environmental domain of QoL	-0.012	0.002	-0.382	6.97	<0.001	-0.015	-0.009

Quality of Life (QoL) of Participants

As shown in Table 2 the highest mean score was in the social relationships domain for both participants and those with depression (72.59±16.97sd and 62.78±24.84, respectively), and the least score is in the environmental domain for both participants and those with depression (62.50±13.19sd and 52.78±16.04).

Table 2 also showed statistically significant differences in the mean scores of the participants with and without depression in the physical (t= 11.2, df=529, p<0.001), psychological (t=8.06, df=529, p< 0.001), social relationships (t=7.62, df=529, p<0.001) and environmental (t=12.25, df=529, p<0.001) domains.

Categorization of Rating of Quality of Life and General Satisfaction with Health Among Participants

In Table 3 overall rating of quality of life was grouped into very poor, neither poor or good and very good and there was a significant association between rating and depression (χ² =28.62, df=2, p<0.001). In the same vein when general satisfaction with health was grouped into very dissatisfied, neither dissatisfied or satisfied and very satisfied a significant association exist between satisfaction with health and depression (χ² =31.06, df=2, p<0.001).

Multivariate Regression analysis

The regression model as shown in table 4 shows that there is a 28.8% of the variance in the perception of quality of life and it is statistically significant ($p < 0.001$). Postpartum depression status is statistically significant with the perception in the following facet and domains of quality of life: satisfaction with health ($\beta = 0.131$, $p = 0.007$, $CI = 0.023$ to 0.147), physical ($\beta = -0.368$, $p < 0.001$, $CI = -0.015$ to -0.008) and environmental ($\beta = -0.382$, $p < 0.001$, $CI = -0.015$ to -0.009) domain of quality of life.

Discussion

A total of 550 participants were recruited for the study out of whom 531 (96.5%) had their information analyzed. One hundred and sixteen participants (21.8%) had postpartum depression. Postpartum depression was found to affect the outcome measure we set out to find in our study. The outcome measure in our study is the perception of quality of life among participants attending either the postnatal clinic or children's welfare clinic for the second set of immunizations for their children. Among the facets and the domains of WHOQoL-BREF, through a regression model, our study found that there is a significant negative correlation between postpartum depression and the perception of quality of life in the physical and environmental domains but a positive significant correlation between postpartum depression and the perception of general satisfaction with participant's health.

The subjective perception of quality of life (QoL) in all the four domains were high in all the participants, with the least mean score in the environmental domain (62.50 ± 13.19) and the highest in the social relationships domain (72.59 ± 16.97). Similarly, such was found for the depressed group when they were singled out. The finding on domain scores for all the participants is similar to a reported finding by Davou, et al.³¹ They reported that the highest and lowest mean scores in a case-control study to determine the subjective QoL of depressed out patients currently receiving medications in comparison with socio-demographically matched controls were in the social and environmental domains of the WHOQoL-BREF Scale. However, his study reported a contrary finding to what our study found on participants with depression. He reported that the physical and the psychological domains had the highest and lowest scores, respectively in the depressed group, but our study found social and environmental domains of the WHOQoL-BREF had the highest and the lowest scores, respectively. The lower mean score in the environmental domain as found in our study may be related to the residual effect of the ethno-religious crises, which had

engulfed Jos and its environs in recent times³². The environmental domain measures financial resources, freedom, physical safety and security, and participating in and having opportunities for recreation or leisure⁷. Ethno-religious crises or any form of crisis in general is known to contribute to the feeling of insecurity which may heighten emotional responses and subsequent low perception of QoL among the participants of being unsafe in their environment. Another important reason that may be associated with low perception of QoL in the environmental domain among the participants, is that, in crisis situation or its aftermath, pleasurable activities or opportunity for pleasurable activities are often lacking or not available at all, and this may influence the way people perceive their QoL in the environmental domain.

Despite the residual effect of the crisis on the Plateau, a good number of the participants scored high on social relationships which measures personal relationships, social support and sexual activities^{7,20}. This subjective high perception in social domain may be related to the high social support enjoyed by the participants from significant others. Social support issue is paramount in the African culture and this is thought to neutralize and/ or control situation of stress, work or family problems. The provision of high levels of social support network is also believed to ameliorate the negative effects of stress, work and family conflict on women's mental health³³. But the lack of social support is associated with stress, depression and mental health problems³⁴.

Furthermore, the dissimilarity between the current study and that of Davou's³¹ may be due to the fact that delivery is most often related with an increase in physical pain as against the perceived social support (which our participants perceived as high) a new mother enjoys from her relations. This has to do with the socio-cultural acceptability of childbirth as a significant life event that all and sundry are required to give the needed support to a new mother.

Participants rated their overall quality of life high and were generally satisfied with their health. These findings are in general agreement with other findings reported by other researchers^{35,36}. Gureje et al.³⁵ reported that self-rated overall health in a representative sample of elderly Nigerians to be high and so is Patricio et al.³⁶ in Portugal, who reported that the overall rating of quality of life to be high in a quality of life predictors and normative data of Portuguese general adult sample. The majority of the participants reside in the urban areas and thus, live in close proximity to the hospital and this gives them quick accessibility to health facilities. Majority of the health facilities are within the capital city of the state. This may be related to the good or high rating in the QoL

and satisfaction with health facets that asked the questions “how would you rate your quality of life?” and on “how satisfied are you with your health?”, respectively.

In this study participants with PPD rated their QoL lower than those without PPD. This finding is consistent with findings of other researchers in the field. Patients with mental disorders, especially depressive disorder were reported to rate their QoL lower^{37, 38}. Participants who had depression had lower perception of QoL in their general satisfaction with health and in all the four domains of WHOQoL-Bref (physical, psychological, social and environmental domains). These findings are consistent with previous studies on how patients with mental disorders, especially depressive disorder perceived their QoL³⁷⁻⁴⁰. The finding is also similar to a study by Lin and colleagues in Taiwan, in which severity of depressive symptoms and social isolation had direct effect on all the four domains of QoL⁴¹. Depressive illness has been shown to have negative impact on energy level, sleep and comfort (physical domain). Also as a clinical entity, depressive illness is most often associated with negative perception of self, the world and the future and hence, women with postpartum depression in this study perceived a poorer QoL in the psychological domain. It is worthy to note that depressive illness has been shown, over time, to lead to loss of interest in pleasurable activities and negative cognition about ones surrounding. This could lead to poor interpersonal relationships, diminished social support and loss of interest in sexual activities. It is also important to note that in the study area, it is customary for a new mother to partake in activities such as 'naming ceremony' for her child and to stay off sexual activities for a period of forty days (in the case of Muslims) or until her menstrual cycle is re-established. These traditions may be stress-inducing especially when the woman is expected to accommodate a large number of people during the naming ceremony and this may compound the depressive episode, and may explain the poorer perception of quality of life in the social relationships domain. The process of preparing for such life event may also be a source of distress and thereby compounding the depressive episode.

Participants with postpartum depression had a low perception of quality of life in the environmental domain. Incessant crisis the state has experienced, the lack of economic opportunities and the displacement of people from their initial places of abode may be one reason participants with depression perceive lower quality of life in the environmental domain. The incessant crisis may lead to security challenges and worry for safety of life and property, both of which are components of environmental domain.

Da Costa et al. in a study on Canadian women at fourth through thirty-eight weeks postpartum showed that scores of all SF-36 sub-scales, including physical and mental health components, were lower in women with PPD in comparison to normative data of Canadian women⁴². In the same vein, a research by Sadat and colleagues showed that women with PPD scored significantly low in both the physical and mental health components of SF-36 when compared with women without PPD at the second and fourth months postpartum⁴⁰. Although, the above studies on QoL were not evaluated by WHOQoL-Bref instrument, these results were consistent with the findings in the present study. Postpartum depression affects the way participants perceive their quality of life and it will be important to put measure in place to mitigate the low quality of life experienced by these women during the postpartum.

In a multivariate analysis exploring the regression model, we find that postpartum depression among our participants leads to significant negative perception in the physical and environmental domains of quality of life, but a positive perception on general satisfaction with health. This discordance finding, especially for a positive relationship between depression and general satisfaction with health could be attributed to the participants' close proximity to the hospital where the study was carried out and the feeling of being satisfied with health, knowing well that their health needs will be taken care of because they have keep an appointment with either their doctors or their child's health doctor.

Conclusion

Though, the quality of life of participants with postpartum depression was significantly low in all the four domains of WHOQoL-BREF including how they rated their QoL and how satisfied they were with their health, a regression model showed that postpartum depression significantly predicts positive perception in the general satisfaction with health but negative in the physical and environmental domains of quality of life.

Limitation and Strength of the Study

The cross-sectional design of this study limits the inference on causality of the variables in postpartum depression. Standardized instruments were used to assess quality of life (WHOQoL-Bref) and depression status (EPDS and SCID) in participants.

Recommendation

There is low perception of quality of life in participants with postpartum depression compared to those without. The lower perception in quality of life requires urgent

attention in the form of health education; advocacy and other interventions that could help women with postpartum depression to cope.

Future research is needed to tease out the cause and effect between postpartum depression and quality of life, and also to find out specific variables that could have positive impact on quality of life in order to bring about better outcome service delivery to women with postpartum depression.

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