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A Study on the Prevalence of Postpartum Depression (PPD) and Associated Factors among Women that Attend Postnatal Care at Masala and Lubuto Health Centres 2022

Lameck Simusokwe*

Department of Clinical Research, The Copperbelt University, Kitwe, Zambia

Abstract

Background: Postpartum depression is a pregnancy related psychiatric condition that affects women of child bearing age and manifests in the first 6 months after giving birth persisting up to 12 months. Symptoms include sleep disturbance, low energy, lack of interest in daily activities as well thoughts of self-harm or harming the baby. However, there are no diagnostic tools or criteria hence the condition is usually underdiagnosed. This condition affects the mother, child and family as a whole. Associated risk factors include low socio-economic status, poor family and social support, unwanted pregnancy etc.

Aim: to determine the prevalence of postpartum depression and associated risk factors among women attending postnatal services at Ndolas New Masala and Lubuto clinics.

Study design: Cross sectional study

Study setting: postnatal clinic

Study population: 80 consenting women with 6 weeks old infants attending postnatal services at Ndolas New Masala and Lubuto clinics.

Method: The study participants were recruited from the women that came for the 6 weeks post-natal review and child immunization using simple random sampling. Eligible candidates were approached and required to consent voluntarily. The data was collected using an investigator administered structured questionnaire and depression screening was done using the Edingburg Postnatal Depression Scale (EPDS). Inclusion was done until the sample size of 80 was attained. The analysis was done using Statistical Package for the Social Sciences (SPSS) software which generated the relevant statistical frequencies and tables.

Results: All the 80 participants (recruited mothers) were analysed. 45% had EPDS scores >8 which indicated depression. 27.5%had a mild form of depression, 12.5% moderate and 5% scored in the severe depression range, an EPDS score of >13.Significant association were found with the following factors, mothers response to knowledge of pregnancy (p=0.033), type of feeding of the baby (p=0.026) and family involvement in child care (p=0.034). No significant association was observed with age of mother (p=0.184), marital status (p=0.960), level of education (p=0.146), fathers support (p=0.604), parity (p=0.266) and presence of chronic condition (p=0.917). No significant association was found with the mode of delivery (p=0.604) contrary to popular belief.

Conclusion: The prevalence of postpartum depression six weeks after delivery of 45% appears to be very high and necessitates routine screening of all postnatal mothers. Family involvement in child care, mothers response to knowledge of pregnancy and type of baby feeding are statistically significant associates of postpartum depression.

Keywords: Postpartum depression • Edinburg postpartum depression scale • Tricyclic antidepressants

***Address to Correspondence:** Lameck Simusokwe, Department of Clinical Research, The Copperbelt University, Kitwe, Zambia, Tel: 961046633; E-mail: Ramzsimsoque@gmail.com*

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Abbreviations: PPD: Postpartum Depression; NTH: Ndola Teaching Hospital; EPDS: Edinburg Postpartum Depression Scale; MDG: Millennium Development Goals; HIV: Human Immunodeficiency Virus; AIDS: Acquire Immune Deficiency Syndrome; PDSS: Postpartum Depression Screening Scale; BDI-II-Beck Depression Inventory II; SSRIs: Selective Serotonin Reuptake Inhibitors; SNRIs: Serotonin/Norepinephrine Reuptake Inhibitors; TCA: Tricyclic Antidepressants; CPD: Cephalo-pelvic Disproportion; IUFD: Intrauterine Fetal Death; TDRC: Tropical Disease Research Centre; MoH: Ministry of Health Zambia; EMOC: Emergency Obstetric Care; PMTCT: Prevention of Mother to Child Transmission; SDG: Sustainable Development Goals

Introduction

Maternal mental health is an internationally recognized public health concern. Postpartum Depression (PPD) is one of the pregnancy related psychiatric illnesses that usually manifests in the first 6 months after giving birth and may persist for up to a year postpartum. This is part of the continuum that ranges from the mild postpartum blues to the severest postpartum psychosis. Postpartum depression exists in the middle of the continuum, with postpartum blues being the mild form of depression and postpartum psychosis the severe extreme of the continuum [1]. This is a study on the prevalence of postpartum depression among women who attend postnatal care and services at New Masala and Lubuto health centres.

New Masala and Lubuto Health centres are urban health centres located in the south-eastern and western part of Ndola District respectively providing out-patient services. Measures are being put in place to upgrade the two clinics into standard mini hospitals by the government of the republic of Zambia through the Ministry of Health. Among the services offered include Delivery Services; Prevention of Mother to Child Transmission (PMTCT), Emergency Obstetric Care (EMOC) and laboratory services as well ambulance services for referrals to higher level health Centres such as Ndola Teaching Hospital, (NTH) [2]. Common complications seen include Cephalo-Pelvic Disproportion (CPD) requiring instrument delivery or a cesarean section if severe, cord prolapse, pre-eclampsia and eclampsia, Postpartum Haemorrhage (PPH) and Intrauterine Foetal Death (IUFD).

Postpartum depression is common among women of child-bearing age with the most prevalence rates being reported to range from 0 to 10 per cent in western country. Prevalence rates from studies in non-western countries are so variable, the lowest being 6.1% recorded in Uganda and as high as >64% in a Zambian study while a Kenyan study showed a rate of 10.6%. This high prevalence in Zambian could be attributed to the fact that the Zambian study focused on the effects of HIV/AIDS which introduced a form of bias to the results obtained, hence the need to do the prevalence study without focus on the contribution of a specific disease condition. Another study done in Zambia by Phiri, et al. 2015 found the prevalence rate to be at 40.3% at Ngombe clinic. Globally the prevalence rate is usually quoted at 10 to 15 percent. However, this figure would not be representative in the developing countries such as Zambia as the study was based on European and American women.

From these studies it can be concluded that the prevalence of postpartum depression varies greatly from one region of the world to another. These variations can be attributed to the lack of consensus on the definition and the symptoms that constitute postpartum depression and the lack of a standardized depression scale and the appropriate cut off score for diagnostic purposes. This results in low levels of concurrent validity between different measurements [3]. These variations will be avoided by conducting the research using one scale and only comparing the findings to other studies that used the same scale. This way a form of objectivity can be ensured.

From the reported prevalence rates, PPD is a common illness which requires adequate screening and hence appropriate treatment. However, it is usually underdiagnosed firstly because of lack of awareness from the primary health care providers especially obstetricians as well as the women. Secondly most women are suffering in silence for fear of being stigmatized and labelled crazy or considering PPD as a normal effects of the pregnancy and do not want to attribute the depression as being caused by the baby and last but not the least is the lack of adequate screening tools in hospitals.

Left untreated this condition can lead to compromised mother-infant interaction that leads to poor development of the child including cognitive, emotional and social. These infants exhibit insecure attachments to their mothers (disorganized-disoriented), more negative, sober, flat affect, protest behaviours, regulation difficulties, and gaze aversion. They also exhibit decreased eye contact, vocalizations, activity levels, and environmental exploration.

Mental health is a significant part of the maternal health and it is worth mentioning that maternal health is one of the Sustainable Development Goals (SDG3). Previously the Millennium Development Goals (MDG) mainly focused on the antenatal aspect of maternal health. Increased awareness of postpartum depression will help in attaining this SDG. There is need to incorporate medical health and mental health in the medical care of postpartum women which is rarely practiced

Statement of the problem

The lack of consensus on the definition and the symptoms that constitute postpartum depression, the lack of a standardized depression scale and the appropriate cut off score for diagnostic purposes pose a great challenge in diagnosing the condition. PPD is usually the underlying cause of many infectious diseases as the immune system is compromised in the case of depression. Hence the need to adequately study the disorder from both the psychiatric and the pathological point of view.

Literature Review

Childbirth is a significant life event, which permanently changes the status and responsibilities of women. This is the period when women are more vulnerable to the affective disorders such as depression.

Maternal depression is a common and disabling complication of the postpartum period. It is thought to occur more commonly in the developing than the developed countries with up to one quarter of

women experiencing some depressive episode over their life time, with the peak incidence occurring during the reproductive years [4].

The prevalence of PPD in developing countries in not well established as it varies greatly from as low as 6.1% in Uganda to as high as >64% reported in Zambia. The symptoms of postpartum depression do not differ from that of the non-pregnancy related depression. The main association is that PPD occurs after giving birth. The cardinal symptoms of PPD include sleep disturbances, low energy and libido, lack of interest in things that previously interested the mother, tearfulness and anxiety, feelings of guilt and failure as well as thoughts of self-harm/suicide and thoughts of harming the baby [5].

The biggest problem encountered with the diagnosis of PPD is the unavailability of diagnostic criteria. However, a number of scales are available for screening for PPD, these includes the Edinburg Postpartum Depression Scale (EPDS), Beck Depression Inventory II (BDI-II) and Postpartum Depression Screening Scale (PDSS). The most commonly used scale is the EPDS, a 10-item, self-rated questionnaire used for detection of PPD. A score of 12 or more on the EPDS or an affirmative answer on question 10 (presence of suicidal thoughts) indicates depression [6].

There are a number of risk factors that are associated with PPD. These include low socioeconomic status, poor social support from family, friends and the spouse, unwanted pregnancy, infidelity, domestic violence and negative life experience for example death, loss of employment etc. in the year prior to the birth of the child [7]. However the extended family system in Africa has been reported to be preventative from PDD.

Postpartum depression can be managed well with a good prognosis once identified early. The treatment options available include non-pharmacological and pharmacological [8]. Non-pharmacological treatment options include cognitive behavioural therapy which involves individual or group psychotherapy and interpersonal therapy. Support groups can also be helpful in patients who opt for the non-pharmacological management of the depression [9].

Pharmacological strategies are usually used in women with moderate to severe depression and those who have failed to respond to the non-pharmacological treatment. It can also be used as adjuvant therapy. This involves the use of antidepressants with Selective Serotonin Reuptake Inhibitors (SSRIs) as the first line drugs. Others drugs used include Serotonin/Norepinephrine Reuptake Inhibitors (SNRIs) and Tricyclic Antidepressants (TCAs). Anxiolytic drugs such as Lorazepam and Clonazepam can be used with women suffering from anxiety disorder as well [10].

Furthermore, delayed identification will impair the womans ability to carry out her normal tasks and cope with the care of her child. Finally, the whole family is affected by the womans illness as her contribution to the socio-economic status of the family and country is suboptimal.

The biggest problem that exists especially in developing countries is the separation of maternal mental health and medical health. This has brought about reluctance among medical healthcare providers to fail to screen for mental condition hence the failure to provide a holistic approach to the management of the patient. This problem has been made worse in Zambia by the shortage of psychiatric doctors. This study aims to increase the awareness among healthcare providers which will indirectly lead to increased knowledge base among women attending antenatal and postnatal clinics leading to reduction in the stigma associated with psychiatric conditions.

The lack of research in the subject matter has worsened the problem such that PPD remains underdiagnosed and undertreated. By determining the prevalence rate of the disorder in our setting, the primary health care provider will be sensitized about the condition and understanding the signs and symptoms hence increase the diagnostic acumen. This may evolve into policies that would see enhanced interest in this area, incorporation of PPD in training hence improvement in recognition and management [11].

Aim (Main objective)

To screen for and determine the prevalence of PPD among women giving birth at Masala and Lubuto Health Centres and factors associated with PPD.

Specific Objectives

- Determine prevalence of PPD in women delivering at Masala and Lubuto Health Centres
- Determine the factors associated the development of postpartum depression.
- Increase awareness of PPD among primary health care provider

Research question

What is the prevalence of PPD at Ndola‟s Masala and Lubuto clinics and what are the factors related to PPD?

Hypothesis

PDD is common among women of

- Young age,
- Low socio-economic status,
- Poor social and family support and
- Had negative life experience prior to the birth of the child.
- This research will prove that PPD has adverse effects on the health of the mother hence the need to be aware on the prevalence of this psychological pathology.

Rationale for the study

Despite all the studies done on postpartum depression in other parts of the world, not many studies and publications have been done here in Zambia. However, a study by Phiri, et al. 2015 determined the prevalence to be at 40.3% at 6 weeks postpartum at Ngómbe clinic.

This lack of studies or publication both in psychiatry and reproductive health, have created a knowledge gap on postpartum depression in Zambia hence the condition is underdiagnosed and often not screened for in women seeking postnatal care.

This study aimed to determine the disease burden among women at Ndolas New Masala and Lubuto clinics and the associated factors to the condition hence forming the baseline for future studies. This aimed to also increase the knowledge base both among the women

affected and the primary health care provider˝s thereby encouraging early diagnosis and ultimately early treatment.

Significance of the study

Establishing the prevalence of PPD assist in determining the burden this condition contributes to the overall health burden in Zambian. This study provided an estimate to that burden.

In addition, there is little evidence both through research and/or publications on PPD in psychiatry, obstetrics and medicine and this has led to reduce information on PPD in Zambia despite the high prevalence rates reported in other parts of Africa and the world. Such research studies adds to the PPD database that can be developed and the trend of the condition with the various associated risk factors identified hence increasing the body of knowledge on PDD.

This study aimed to increase the awareness among the primary health care providers on the disease burden of PPD hence encouraging early diagnosis and ultimately treatment. To some extent it also assessed how much the women know about the condition thereby removing the bias of considering PPD as a psychiatric condition than a medical one, thereby incorporating mental health and medical health. In addition, the study will look at the most common factors associated with PPD among the women at Masala and Lubuto health centers.

Methodology

Study setting

The study was conducted at Masala and Lubuto health centres. These were conducive because they are an urban health centre with both delivery and postnatal services hence allowing the attainment of the required sample size. The study participants were recruited as they came for post-natal reviews or by request so that they can come at 6 weeks postnatal. The sampling methodology used was the simple random sampling among all the women coming for the 6 weeks˝ vaccines for the infants only. The mini hospital caters for a wide range of patients with different socio-demographic characteristics that made it ideal to screen for the different risk factors associated with PPD. questionnaires were also administered to the participants on location at Masala and Lubuto Health Centre postnatal clinic review.

Target population

This included all consenting women who will give birth to live infants which at the time of the study who were at least six weeks old. The inclusion criteria consist of:

- The woman would have given birth 6 weeks ago.
- The woman should consent to participate in the study.
- The baby should be alive and of good health.
- The woman should not have any previous depression episode.
- The woman should not have any condition predisposing her to depression.

The screening was done using the Edinburg Postnatal Depression Screening Scale (EPDS).

Study design

This was a prospective cross sectional questionnaire based study that involved researcher administered questionnaire. Each participant was interviewed in the language of preference with the most common being Bemba and English. The consistency across languages was ensured by the researcher or research assistant who is conversant with the local languages administering the questionnaire to people speaking the local language. Evaluation for depression was done using the Edinburgh Postnatal Depression Scale (EPDS). This evaluates how the mother has been feeling for the past seven days. The EPDS is a 10 items, self-rated questionnaire used for detection of PPD. A score of 12 or more on the EPDS or an affirmative answer on question 10 (presence of suicidal thoughts) indicates depression and requires further evaluation and possible treatment (Table 1).

Sample size calculation

The following formula will be used:

Sample size=n/(1-(n/population))

Where,

$N=Z^2 \times P(1-P)/d^2$

Where N=number of participants, Z and d are standard constants at confidence level of 95% and Z=1.96, d=0.05 and P is the estimated prevalence for this study taken as P=9.7% (According to an international study by Parsons CE, et al. Br Med Bull 2012; 101:57-79

Level of confidence measure(Z)	1.96(at 95% confidence level)
Margin of Error(d^2)	5%
Baseline level of the indications(P)	50%(as no estimates)

Table 1. Information required for computing the sample size.

$N=Z^2 \times P(1-P)/d^2$

N= (1.96) 2 (0.097) (1-0.097)/(0.05)2

=(3.8416) (0.097) (0.903)/(0.0025)

=(0.33649)/(0.0025)

=134.596

=135

Hence the total number of participants in the research will be 135.

Data collection and instruments

This was a questionnaire based study with both open and closed ended questions. It was administered by the researcher at the time of the interview.

The questionnaire was made up of two sections.

Section A involved the socio-demographic questionnaire. This aimed to get the personal information, past obstetric history as well as the health status of the mother and child in the past 6 weeks.

Section B involved the EPDS, the screening tool for PPD. It was first described by Cox, Holden and Sagovsky in 1987 with 13 items but later reduced to 10 items and validated in a sample of 84 postpartum women.

The scale asks the respondent about their feelings over the previous seven days. Possible responses are scored from 0-3, in growing order of severity, creating a maximum score of 30. The EPDS is a 10 items, self-rated questionnaire used for detection of PPD. A score of 12 or more on the EPDS or an affirmative answer on question 10 (presence of suicidal thoughts) indicates depression.

This scale only shows the presence of PDD *i.e.* screening tool and not the severity *i.e.* diagnostic tool. The severity can be determined by a comprehensive psychiatric history and examination.

Data analysis

The data was analysed both manually and electronically. The manual analysis will be looked for correct entries, missing values and any other mistakes that may have been encountered. Electronic analysis, the SPSS analytical software was used to generate all the relevant statistical values (Table 2).

Variables

The variables of interest in the study included:

Dependant variable	Independent variable
Postpartum depression	Age of mother
	Parity
	Socio-economic status
	Level of education
	Family and social support
	Negative life experience
	Marital status
	History of chronic infection
	Level of education

Table 2. Variables.

Study limitations

The likely limitations foreseen were the low literacy levels and the fact that most of the terms that were used such as depression do not have the specific meaning in the local languages (Figure 1).

This required the chief investigator and the assistants to be conversant with the local language equivalents or closes meaning. Other limitations included financial constraints and time factors (Table 3).

Study time frame

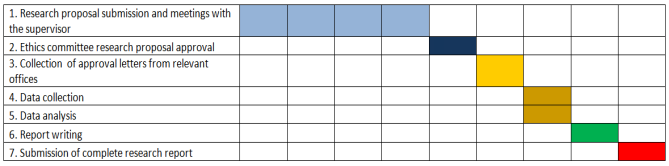

Figure 1. Expected time of completion of the study.

Study budget

TDRC research approval	500
Printing	300
Talk time	100
Research assistant	700
Binding	150
Stationery	300
Transport	300
Unforeseen eventualities	300
Grand total	2650

Table 3. Unit price in Zambian Kwacha (ZMK).

Results

This chapter indicates the findings from the study (Table 4).

Section A: Demographics of respondents

Age	Frequency	Percentage distribution
12-17	10	12.5
18-23	18	22.5
24-29	38	47.5
30-34	10	12.5
>34	4	5
Total	80	100

Table 4. Age of respondents.

Age distribution: 47.5% (38) were between 24-29 years old, 22.5% (18) were aged between 18-23 years old. The age ranges 12-17 years and 30-34 years old had 12.5% (10) each and 5% (4) for age >34 years (Figure 2).

Marital status: 72.5% (58) of the respondents were married while the rest 27.5% (22) were single (Table 5).

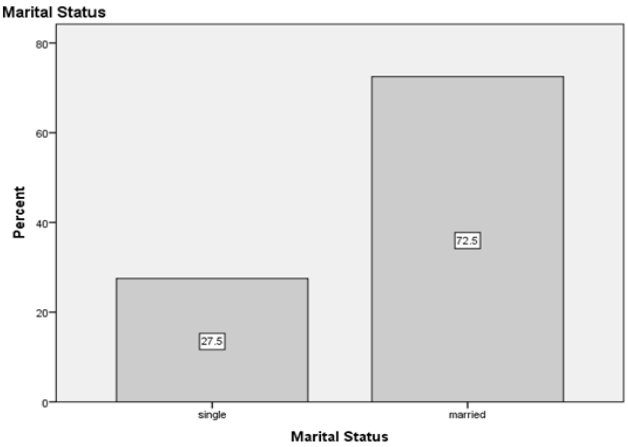

Figure 2. Marital status of respondents.

	Frequency	Percent
Primary	2	2.5
Secondary	62	77.5
College/University	16	20
Total	80	100

Table 5. Level of education.

Level of education: 77.5% (62) attained secondary education and 20% (16) and 2.5% (2) attaining university/college and primary education respectively (Figure 3).

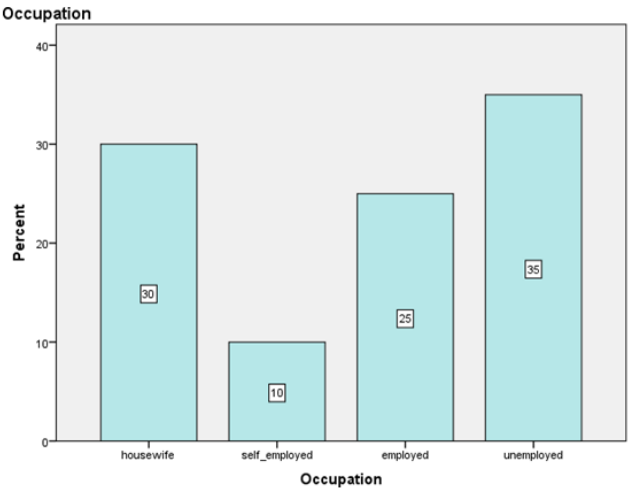

Figure 3. Occupation of respondents.

35% (28) are unemployed while 30% (24) are housewife. 25% (20) and 10% (8) are employed and self-employed respectively. Majority (housewife and unemployed) of respondents are not in any form of employment (Figure 4).

Section B: The prevalence of postpartum depression.

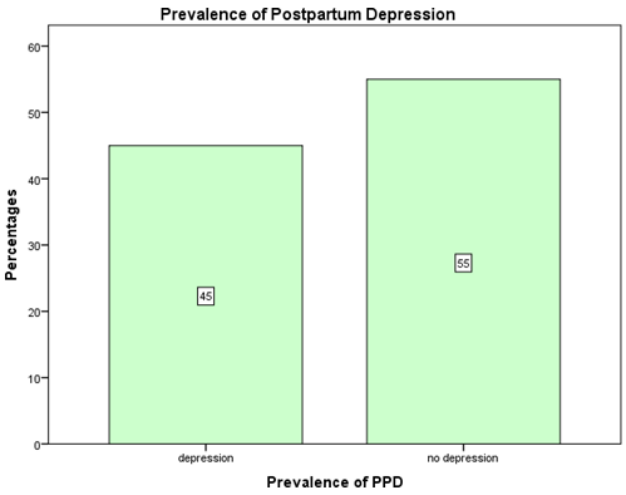

Figure 4. The prevalence of postpartum depression according to the EPDS.

45% (36) scored EPDS >8 indicating that they had depression of varying severity while 55% (44) scored <8 showing that they were not depressed. 27.5% (22) had mild form of depression, 12.5% (10) and 5% (4) had moderate and severe depression respectively (Table 6).

	Frequency	Percentage
Mild depression	22	61.1
Moderate depression	10	27.8
Severe depression	4	11.1
Total	36	100

Table 6. Indicates the severity of PPD according to the EPDS.

61.1% of those with depression had mild depression while 27.8% and 11.1% had moderate and severe depression respectively (Table 7).

Section C: Associated risk factors

		Postpartum Depression (PPD)			p-value
		Absent	Present	Total	
Age	12-17	60.0% (6)	40.0% (4)	100.0% (10)	0.184
	18-23	66.7% (12)	33.3% (6)	100.0% (18)	
	24-29	42.1% (16)	57.9% (22)	100.0% (38)	
	30-34	80.0% (8)	20.0% (2)	100.0% (10)	
	>34	50% (2)	50% (2)	100.0% (4)	
	Total	55% (44)	45% (36)	100.0% (80)	
Marital status	Single	54.5% (12)	45.5% (10)	100.0% (22)	0.96
	married	55.2% (32)	44.8% (26)	100.0% (58)	
	Total	55.0% (44)	45.0% (36)	100.0% (80)	
Occupation	Housewife	50.0% (12)	50.0% (12)	100% (24)	0.902
	Self-employed	50.0% (4)	50.0% (4)	100% (8)	

	Employed	60.0% (12)	40.0% (8)	100% (20)	
	Unemployed	57.1% (16)	42.9% (12)	100% (28)	
	Total	55.0% (44)	45% (36)	100% (80)	
Form of delivery	SVD C/S	53.3% (32)	46.7% (28)	100.0% (60)	0.604
		60.0% (12)	40.0% (8)	100.0% (20)	
	Total	55.0% (44)	45.0% (36)	100.0% (80)	
Parity	01-Feb	47.8% (22)	52.2% (24)	100.0% (46)	0.266
	03-Apr	66.7% (20)	33.3% (10)	100.0% (30)	
	>4	50.0% (2)	50.0% (2)	100.0% (4)	
	Total	55.0% (44)	45.0% (36)	100.0% (80)	
Level of education	Primary	100% (2)	0.0% (0)	100% (2)	0.146
	Secondary	58.1% (36)	41.9% (26)	100% (62)	
	College/higher	37.5% (6)	62.5% (10)	100% (16)	
	None				
	Total	55.0% (44)	45.0% (36)	100% (80)	
Father support	Yes	53.3% (32)	46.7% (28)	100% (60)	0.604
	No	60.0% (12)	40.0% (8)	100% (20)	
	Total	55% (44)	45% (36)	100% (80)	
Family support	Very involved	37.5% (12)	62.5% (20)	100% (32)	0.034
	Involved	68.8% (22)	31.2% (10)	100% (32)	
	Not involved	62.5% (10)	37.5% (6)	100% (16)	
	Total	55.0% (44)	45.0% (36)	100% (80)	
Adverse life event	None	60.0% (30)	40.0% (20)	100% (50)	0.285
	Death	37.5% (6)	62.5% (10)	100% (16)	
	Illness	57.1% (8)	42.9 (6)	100% (14)	
	Total	55.0% (44)	45.0% (36)	100% (80)	
Baby feeding	Brestfeeding	48.5% (32)	51.5% (34)	100% (66)	0.026
	Mixed feeding	100% (6)	0.0% (0)	100% (6)	
	Not B/feedding	75% (6)	25.0% (2)	100% (8)	
	Total	55.0% (44)	45.0% (36)	100% (80)	
Feeling once pregnancy is known	Nothing	0.0% (0)	100% (2)	100% (2)	0.033
	Worried	44.4% (8)	55.6% (10)	100% (18)	
	Happy	70.0% (28)	30.0% (12)	100% (40)	
	Shocked	40.0% (8)	60.0% (12)	100% (20)	
	Total	55.0% (44)	45.0% (36)	100% (80)	
Chronic condition	None	53.6% (30)	46.4% (26)	100% (56)	0.917
	Hypertension	60.0% (6)	40.0% (4)	100% (10)	
	HIV	57.1% (8)	42.9% (6)	100% (14)	
	Total	55.0% (44)	45.0% (36)	100% (80)	

Table 7. Distribution and factors associated with postpartum depression.

Family support (0.034), mothers response to knowledge of pregnancy (0.033) and baby‟s feeding (0.026) were significantly related to development of PPD statistically.

However, age of the mother (0.184), marital status (0.960), parity (0.266), fathers support (0.604), adverse life event (0.285) prior to pregnancy and presence of a chronic illness (0.917) were not significantly related to the development of PDD statistically (Figure 5).

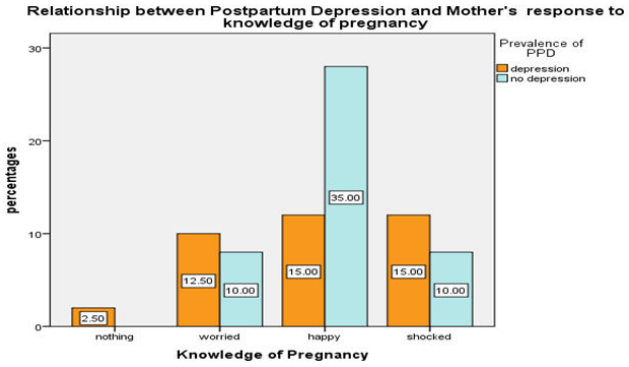

Figure 5. Indicates the relationship between the mothers response to knowing they are pregnant with the prevalence of postpartum depression.

60% of women who became worried on knowing they were pregnant were likely to be depressed as well as 55.6% of the women that became worried. However, only 30% of women who became happy were likely to be depressed (Figure 6).

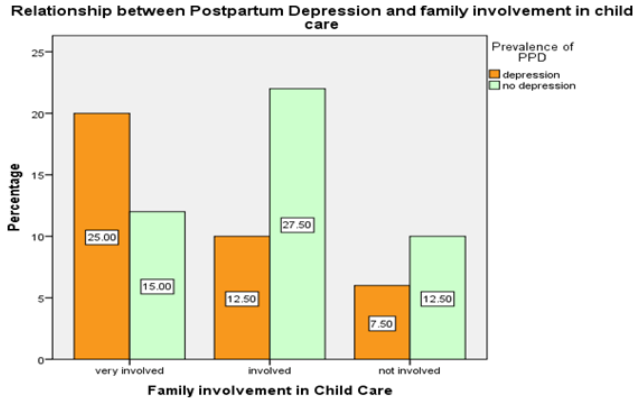

Figure 6. Indicates the relationship between family involvement in child care with the prevalence of postpartum depression.

37.5% of women did not have family involvement in child care and were likely to be depressed whereas 62.5% and 32.2% had very involved and involved families respectively (Figure 7).

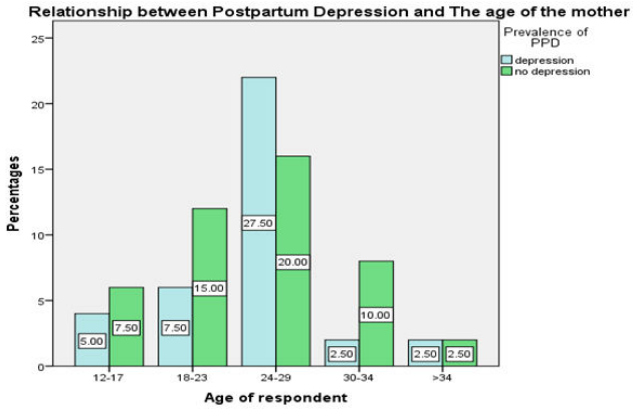

Figure 7. Indicates the relationship between the ages of the mother with the prevalence of postpartum depression.

57.9% of the women aged between 24 and 29 years old were likely to be depressed (Figure 8).

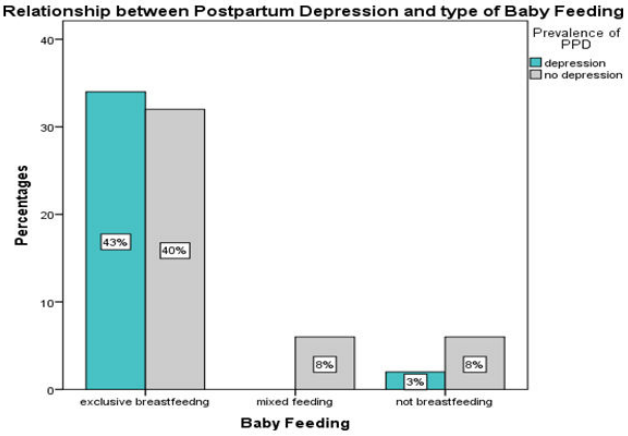

Figure 8. Indicates the relationship between type of child feeding with the prevalence of postpartum depression.

25% of the non-breastfeeding mothers were likely to be depressed compared to 51.5% of breastfeeding mothers.

Discussion

Demographics

Majority of the mothers enrolled in the study were between the ages of 18 to 30 years indicating the young reproductive age of women attending postnatal care at New Masala and Lubuto clinics. Most of them were married with a minimum secondary level of education. This reflects the urban nature of the location of New Masala clinic and Lubuto clinic. However, majority were not in any form of employment and were staying at home as housewives indicating lack of employment.

Prevalence

The study determined the prevalence of PPD to be at 45% at 6 weeks postpartum at New Masala and Lubuto clinics using the EPDS, 4.7% higher than the 40.3% reported at Ngómbe clinc in Lusaka. Furthermore this is higher than the assumed prevalence of 9.7% according to Parsons CE, et al., as well as most of the African

studies on postpartum depression with the lowest recorded prevalence of 6.1% in Uganda. The prevalence is even higher than the global prevalence of 10 to 15 percent.

In addition, majority of those found with depression had the mild (61.1%) form of depression with a small 11.1% having severe depression and these need continued psychiatric follow up.

The fact that most of the women with depression had the mild form entails that most of the women see the depressive phase after giving birth as part of the normal experience and do not seek medical help hence the under diagnosis of the condition in the postnatal mothers.

Further this calculated prevalence could be an underestimate because it is not every mother that was screened and the total number of participants in the study was not attained.

Associated factors

From the study, it was found that how the mother feels on knowing she is pregnant was significantly associated with postpartum depression. This can attributed to the fact that expected and wanted pregnancies brings joy and happiness whereas unwanted pregnancies will tend to induce worry and shock in the mother hence predisposing them to develop postpartum depression.

Family support in caring for the infant was also found to be significantly associated with postpartum depression. This is because the family provides social, emotion and physical support to the mother and if that is absent the mother is likely to develop postpartum depression. However, the study found that the fathers support has no bearing on the development of postpartum depression by the mother. This can be attributed to the notion of women independence as a result the husbands support has no bearing on the well-being of the mother and child.

Another factor that had a significant association with PPD from this study was the type of feeding the baby was on. The results showed that lack of breastfeeding was associated significantly with PPD. Feeding time encourage the interaction between the mother and child and this is an important moment of bonding for the mother and child. This is seen mostly in HIV positive mothers who opt for bottle feeding once the child is born. These are at an increased risk of developing postpartum depression.

This study found that, the age of the mother, occupation, level of education, parity and adverse life event did not have any association with the development of postpartum depression in women at New Masala and Lubuto clinics. This is consistent with the findings of Masau, et al. 2013 and Phiri, et al. 2015.

Despite previous belief that mode of delivery especially C/section and maternal chronic illness are associated with development of postpartum depression, this study did not show any significant associations.

Limitations

The limitations encountered in the study included inadequate time and lack of funding for data collection.

On an average day the postnatal clinic would only attend to less than 10 mothers coming at 6 weeks. The clinic was only conducted in the morning from 07:30 until 12:00 hrs further restricting the time data can be obtained.

The other challenge was the language barrier due to the fact that most of the terms in the questionnaire had no equivalents in the local languages such that the meaning was either too simplified or lost completely.

The study was funded by the investigator and this limited how much could be done.

Other limitation include the exact cause of the postpartum depression could not be determined and only associations were determined.

The results cannot be generalized for Ndola district let alone Zambia because the study population only included mothers from the New Masala and Lubuto clinics catchment area which small and not representative of Ndola district or Zambia.

Conclusion

The prevalence of postpartum depression at 6 weeks among women attending postnatal services at New Masala and Lubuto clinic was 45% which is very high compared to other studies done. Family involvement in child care, mothers response to knowledge of pregnancy and type of baby feeding are statistically associated with postpartum depression. Factors such as age of the mother, marital status, and level of education, parity, fathers support, adverse life event prior to pregnancy and presence of chronic illness appear not to be significantly associated with postpartum depression.

Recommendations

Based on the findings of this study, the following recommendations have been made:

Introduce routine screening for PPD for all mother attending the 6 weeks postnatal and referral of all mothers that score above the established threshold. This can be done by giving the EPDS to the mother who can answer the questionnaire.

Need for a more robust study with a larger sample size that would provide a more representative picture of PPD in Ndola and other parts of the country.

Declaration

I hereby do declare that this study is my own piece of work and that it has not been partially or wholly presented before for any degree or examination in any University or College. All the sources of information used or quoted have been thoroughly cited and acknowledged as complete references.

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I thank God Almighty for the continued presence since that first day in my University education at Copperbelt University main campus until now. You are Ebenezer for sure.

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