

## Original Article

### KNOWLEDGE OF POSTPARTUM DEPRESSION AND ITS ASSOCIATED RISK FACTORS AMONG NURSE-MIDWIVES IN A NIGERIAN TERTIARY HOSPITAL

JOEL, Adeleke Afolayan (PhD)<sup>1</sup>; ONASOGA, Olayinka A. (MScN)<sup>1</sup>; REJUARO, F. M. (PhD)<sup>1</sup>; YUSUF, Abdur-Rashid Gambari (BNSc)<sup>1</sup>; CHIBUIKE, Onuabueke (BNSc)<sup>2</sup>

<sup>1</sup>Department of Nursing Science, Faculty of Clinical Sciences, College of Health Sciences, University of Ilorin, Nigeria

<sup>2</sup> Faculty of Nursing, Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria

#### ABSTRACT

**Background:** Postpartum depression (PPD) is a global childbirth-related problem that affects many women and if ignored can have long-term adverse consequences, for both mother and child. Therefore, timely identification of its risk factors requires a good knowledge base for the care provider.

**Methods:** A descriptive cross sectional study was used to assess the knowledge of PPD and its associated risk factors among nurse-midwives in a tertiary hospital in Bayelsa State, Nigeria. A systematic random sampling technique was used to select a sample size 114 nurse-midwife respondents. A well-structured questionnaire was used to collect data from the participants. The same were analyzed using descriptive and inferential statistics with level of significance was set at 0.05(5%).

**Findings:** Despite the fact that majority of nurse-midwives rated their information level on postpartum depression as moderate, most of them still maintained that cigarette smoking, unwanted pregnancy, poor economic status cannot predispose a woman to PPD. Furthermore, majority affirmed that Edinburg Postnatal Depression Scale (EPDS) can be used to screen for PPD yet only about half of the respondents opined that PPD tendency can be detected during pregnancy and less than half of them affirmed that a score of > 10 using the EPDS indicates depression. The study also found significant relationship between educational qualification and level of information about PPD and its associated risk factors.

**Conclusion:** The level of knowledge of nurse-midwives is not at the expected level since majority still have knowledge deficit regarding risk factors and how to detect PPD. Hence, it was recommended that periodic suitable training programs on PPD should be developed for healthcare professionals especially for nurse-midwives who are the first point of contact during antenatal, labour and post-natal period.

**Key words:** Nurse-midwives, risk factors, postpartum depression

---

\*Corresponding author: [joel.afolayan@gmail.com](mailto:joel.afolayan@gmail.com), +2348037116208

## INTRODUCTION

Postpartum depression has been described as a condition that affects the love and happiness mothers expect to feel towards their newborn babies (Beck, 2002). Depressive disorders rank among the leading causes of disability worldwide (WHO, 2010). Postpartum depression (PPD) is as one of the world's increasing epidemics, and affects approximately 11-42 % of postpartum women globally. This shows that PPD is a major public health concern for childbearing women. Postpartum depression (PPD) refers to as a non-psychotic depressive episode that begins within the first 4 weeks of postpartum period (WHO, 2010). According to the ICD-10, PPD is a mild mental and behavioral disorder beginning within the first 6 weeks of delivery. It is the most common complication of childbearing affecting approximately 10-20% of all mothers. There is also a 30-45% risk of relapse in subsequent pregnancies. However, the prevalence rates tend to vary from one region to another depending on socioeconomic status and other determinants of health such access to quality care. Narrowing down to the African continent, the incidence rate is estimated 10% and 32%. Focusing on Ghana, the prevalence is approximately 27%. These prevalence figures show that postpartum depression is quite a challenge in all parts of the worlds.

Postpartum depression is a serious mood disorder that may carry life- long consequences for a woman and her family (Corwin *et al.*, 2010). Postpartum depression may have an adverse effect on the mother's social adjustment after birth, the marital relationship, as well as the mother-infant interaction. A mother's depression in the early years of an infant's life may affect the child's psychological development causing very significant intellectual deficits. The effects of postnatal depression on the mother, her marital relationship, and her children make it an important condition to diagnose, treat, and prevent. However, the importance of detecting

and treating postpartum depression has been largely overlooked in practice over the years hence, Rothman (2006) affirmed that despite the well-documented risk factors and health consequences of postpartum depression, is on the increase PPD and often remains undetected and untreated.

The prevalence rates of PPD vary widely from place to place, the disorder is thought to occur three times more commonly in developing than in developed countries. Halbreich and Karkun (2006) stated that the range of international PPD prevalence rates may be due to cross - cultural variables, screening methods differences in the perception of mental health and its stigma, or differences in socio - economic backgrounds. Although the causes of PPD are not well understood, but a number of risk factors have been identified such as a history of depression, cigarette smoking unplanned and unwanted pregnancy, low socioeconomic status, marital status, maternity blues, poor marital relationship, life stress, low social support, childcare stress, low self-esteem and prenatal anxiety are the common risk factors associated with PPD (Sara & Breese, 2006). According to Goodman (2004) postpartum depression (PPD) can evolve from a preexisting case of the baby blues, or can become apparent after the first weeks of giving birth and can last as long as 14 months. Feeling of guilt, sadness, hopelessness, low self-esteem, exhaustion, social withdrawal, inability to be comforted, becoming easily frustrated and inadequate in taking care of the baby are the most common symptoms of PPD. A study conducted in a tertiary hospital in Nigeria indicated that the incidence of postpartum depression was 27.2% and that preterm delivery was found to be risk factors for postpartum depression in the study population, (Ebeigbe & Akhigbe 2008). The most efficient way of preventing PPD is the determination of woman at risk, the determination of groups at

risk is possible through efficient follow up care before and after birth.

Various studies have shown the impact of PPD over the years, on mother-infant relationship, as well as on healthy child development (WHO, 2010). It affects both the mothers' health and the child's developments and elicits negative clinical implications for maternal – infant attachments; there is a withdrawn and disengaged behavior in the mother and/or intrusive and hostile mother – infant communication (Mancini *et al.*, 2007). Furthermore, extreme cases of postpartum depression can lead to suicide or even postpartum psychosis and infanticide. Research has shown that experiencing symptoms of PPD can have immediate ill effects on the offspring (Kavanaugh *et al.* 2006).

Untreated postpartum depression can have adverse long-term effects. For the mother, the episode can be the precursor of chronic recurrent depression. For her children, a mother's ongoing depression can contribute to emotional, behavioral, cognitive, and interpersonal problems in later life. If postpartum depression is to be prevented by clinical or public health intervention, its symptoms and risk factors need to be reliably identified.

Evidences suggest that postpartum depression is often overlooked and misdiagnosed and most vulnerable women are rarely recognized during pregnancy or after delivery, thus do not always receive the necessary care ( Babatunde, 2010). This is especially common in developing countries where mental health is generally ignored (Seda & Naile, 2010). Unfortunately, in most developing countries including Nigeria, mental health is often neglected during pregnancy and postpartum period, hence PPD is not given any priority and routine screening is not conducted for it (Seda & Naile, 2010).

Knowledge of PPD and its associated risk factors may help to identify those who are at higher risk and this can help them benefit from early

detection and prompt management of risk factors of postpartum depression, thus decrease in long-term negative effects on children as well as their mothers. In Nigeria, Nurse-midwives have important responsibilities in antenatal and postnatal health services since they are the first point of contact for women during pregnancy, labour and puerperium; and also interact with the new mother many times in the first few years. In other words, midwives play key role during the postnatal period and are the major care giver, yet there is little or no study on their level of knowledge on PPD hence it becomes imperative to assess their knowledge of this disorder and its associated risk factors in a tertiary hospital in Bayelsa State, Nigeria.

#### **MATERIALS AND METHODS**

A descriptive cross sectional study design was adopted to assess the knowledge of PPD and its associated risk factors in a tertiary hospital in Bayelsa State. The study was conducted in Federal Medical Centre Yenagoa, in Bayelsa State. The Hospital is a tertiary health facility that is located in Onopa in Yenagoa, Bayelsa State which was established in 1999, which has total number of 276 nurses with 228 of them as nurse-midwives. The institution serves as a referral center providing specialized medical services for the entire state. A systematic random sampling technique was used to select a sample size 114 nurse-midwives respondents for this research study. A self-structured questionnaire was used to assess the knowledge of PPD and its associated risk factors among nurse-midwives. The questionnaire was divided into two sections namely; Section A contains information Demographic characteristics data while Section B elicits information on knowledge on postpartum depression and its risk factors. The respondents were properly informed and guided on how to fill the questionnaire which was retrieved immediately after filling by the respondents. The response rate was 100%. Permission to carry out the study was obtained from the management of the hospital. Consent was also obtained verbally from individual

respondent. The respondents were made to understand the purpose of the study and that they will not be held responsible or liable for any information given. The information provided was treated confidentially and respondents' anonymity was maintained.

Data collected was recorded and analyzed using SPSS version 19.0. The descriptive statistics were produced for all variables and data were represented using tables and charts. Inferential statistic was also done using chi-square with level of significance set at 5% (0.05)

**RESULTS**

Results on the demographic features of the respondents show that 58(50.9%) of the respondents were within the age range of 31-35 years, 31(27.2%) were between 36-40 years and 14 (12.2%) were 40 years and above. The remaining 11(9.7%) were between 26- 30 years. Up to 109 (95.6%) of the respondents were female and 85(74.6%) were married, more than half 65(57.0%) of the respondents were diploma holders and 71(62.3%) had 5-9 years working experience, 22(19.3%) had 1-4 years working experience, 12(10.5%) had 10-14 years while 9(7.9%) of respondents had 15 years and above working experience (Table 1).

All the respondents 114 (100%) had heard about postpartum depression and their initial source of information was school during their professional training. Up to 100 (87.7%) of the respondents said that postpartum depression develops within six weeks of delivery. More than three-quarter 89(78.1%) of the respondents opined that cigarette smoking cannot predisposes a woman to PPD while 83 (72.8%) said physical stress. Almost all 111(97.4%) affirmed that genetic makeup can predispose an individual to PPD. In addition, 102(89.5%) agreed that age of the mother is a risk factor for PPD. More than half 61 (53.5%) of the respondents claimed that previous history of depression can result in PPD while 93 (81.6%) said family history of depression. 77(67.5%) indicated that lack of social support can predispose a woman to PPD. Majority of the respondents 78 (68.4%) do not

believe that poor economic status can result in PPD. Also 92(80.7%) of the respondents stated that Unplanned and unwanted pregnancy is not a risk factor to PPD. 89 (78.1%) indicated that prenatal anxiety is not a risk factor associated with PPD 72(63.2%) of respondents agreed that that poor marital relationship contribute to PPD.

**Table 1: Demographic Characteristics of the Nurses (n=114)**

Variables	Response	Frequenc y	Percent age (%)
Age	26-30	11	9.7
	31-35	58	50.9
	36-40	31	27.2
	40 above	14	12.2
Sex	Male	5	4.4
	Female	109	95.6
Marital Status	Single	29	25.4
	Married	85	74.6
Educational Qualification	diploma (RN/RM /RPN)	65	57
	First Degree (BNSc /B.Sc.)	38	33.3
	Second Degree (M.sc)	11	9.7
	Third Degree (PhD)	0	0
Year of Working Experience	1-4	22	19.3
	5-9	71	49.3
	10-14	12	10.5
	15 and above	9	7.9

Almost half 56 (49.1%) of the respondents claimed that PPD tendency can be detected during pregnancy and 73(64.0%) affirmed that Edinburg Postnatal Depression Scale (EPDS) can be used to screen for PPD. Less than half 50 (43.9%) of the respondents affirmed that a score of > 10 indicates a diagnosis of depression when using the EPDS. Majority 92(80.7%) of the respondents identify the symptoms of PPD correctly and most of the respondents 88 (77.2%) stated that PPD cannot resolve on its own without treatment (Table 2).

Variables	Response	Frequency	Percentage
Have you ever heard about postpartum depression	Yes	190	100
	No	0	0
What was your initial source of information?	School	55	48.2
	Clinical experience	13	11.4
	Seminars/workshops	29	25.4
	in service training	17	14.9
When can a woman develop post-partum depression	within 6 weeks of delivery	100	87.7
	after 6 weeks following delivery	13	11.4
	During pregnancy	1	0.9
Smoking predisposes a woman to PPD	Yes	25	21.9
	No	89	78.1
Physical stress can predispose a woman to PPD	Yes	83	72.8
	No	31	27.2
Genetic makeup can predispose to PPD	Yes	111	97.4
	No	3	2.6
Age of the mother is a risk factor for PPD	Yes	102	89.5
	No	12	10.5
Previous history of depression can result in PPD	Yes	61	53.5
	No	53	46.5
Family history of depression can predispose PPD	Yes	93	81.6
	No	21	18.4
Lack of social support can predispose to PPD	Yes	77	67.5
	No	37	32.5
Poor economic status can result in PPD	Yes	36	31.6
	No	78	68.4
Unplanned and unwanted pregnancy contribute to PPD	Yes	22	19.3
	No	92	80.7
Prenatal anxiety is a risk factor associated with PPD	Yes	25	21.9
	No	89	78.1
Poor marital relationship contributes to PPD	Yes	72	63.2
	No	42	36.8
PPD tendency can be detected during pregnancy	Yes	56	49.1
	No	58	50.9
Edinburg Postnatal Depression Scale (EPDS) can be used to screen for PPD	Yes	73	64
	No	41	36
With the EPDS a score of > 10 indicates a diagnosis of depression	Yes	50	43.9
	No	64	56.1
Identify the symptoms of PPD	Correct	92	80.7
	Incorrect	25	21.9
PPD can resolve on its own without treatment	Yes	26	22.8
	No	88	77.2

Figure 1: Nurse-midwives' evaluation of information level on PPD

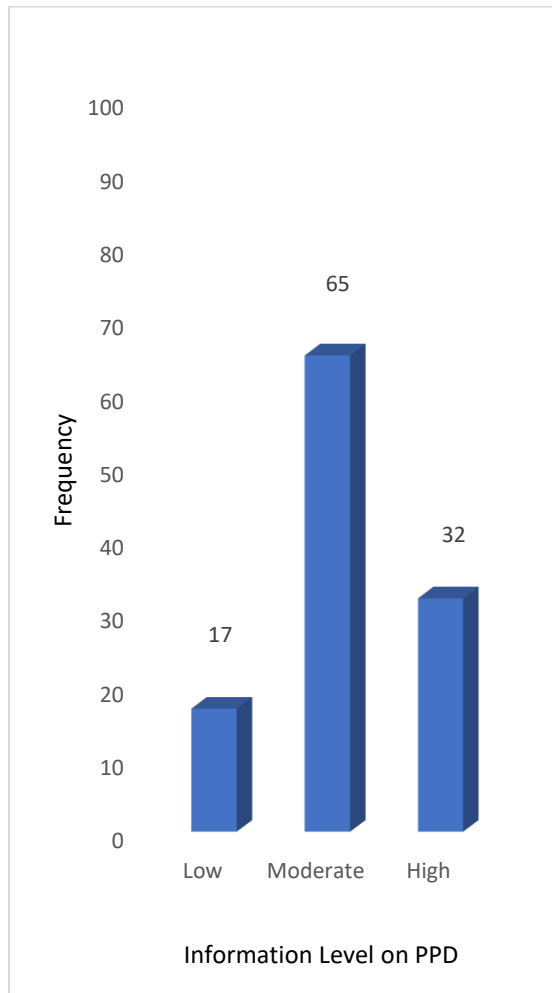
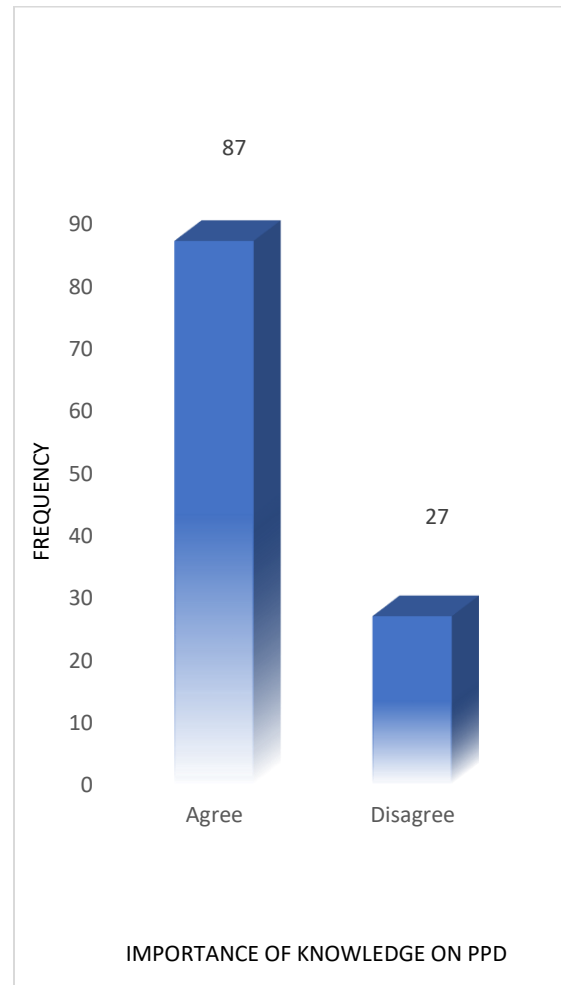


Figure 1 above shows that slightly more than half 65(57.0%) of the respondents evaluated their information level on PPD as moderate, 17(14.4%) as low and 32 (28.1%) as high.

Figure 2: Importance of knowledge on postpartum depression



Additionally, that 87 (76.3%) of the respondents agreed that adequate knowledge on postpartum depression will help to prevent and reduce the incidence of postpartum depression whereas 27 (23.7%) of the respondents disagreed(Fig.2).

Figure 3: Willingness to receive PPD training

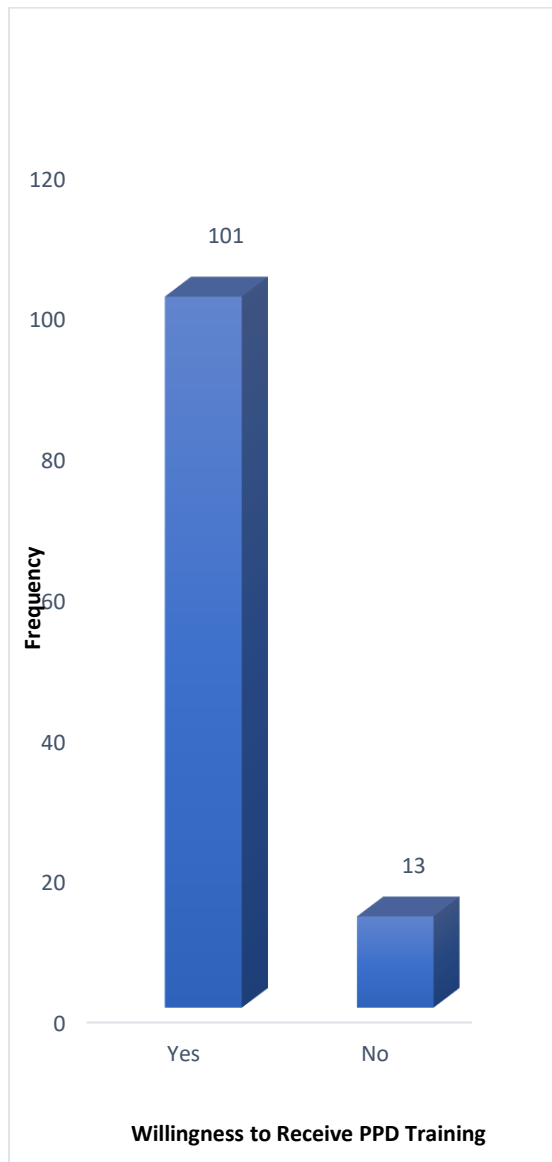


Table 3 below shows that there is significant relationship between educational qualification of respondents and their level of information about PPD and its associated risk factors with  $p$  value=0.005<0.05. Since the  $p$ -value is less than the significance value (0.05), the null hypothesis was rejected and the alternative hypothesis accepted. Hence, there is significant relationship between educational qualification and level of information about PPD and its associated risk factors.

**Table 3: Statistical illustration showing relationship between level of information about PPD and its associated risk factors and education qualification of respondents (n-114)**

Variable		Information Level on Post-Partum Depression			Total	Pearson's Chi-square $\chi^2$	Df	p-values	Remarks
		Low	Moderate	High					
Educational Qualification	diploma	9	37	19	65	$\chi^2=14.560^a$	3	0.005	Significant association
	First Degree (BNSc /B.Sc.)	7	22	9	38				
	Second Degree (M.sc)	1	6	4	11				
	Third Degree (PhD)	0	0	0	0				
Total		17	65	32	114				

**DISCUSSION OF FINDING**

The study showed that the majority of the respondents were within the age range of 31-35 and were female. More than half of the respondents were diplomas holders and had about 5-9 years working experience. Findings have shown that all the respondents have heard of postpartum depression and their main source of information was in school during their professional training (48.2%). However, this is in contrast to a similar study done on the island of Tobago where a higher percentage of the midwives (80 %) received PPD information during training (Celestine-Balfour, 2014). In respect to onset of PPD, nearly all the respondents 100 (87.7%) said that post-partum depression develops within six weeks of delivery. This is in-line with reports from various studies that a woman has a greater risk

of being admitted for PPD within the first month of the postpartum period than at any other time in her life because the postpartum period is a high-risk period for the occurrence of anxious and depressive episodes. (Centre for Disease Control, 2008). NIHCM (2010) added that PPD usually occur within the first two to three months postpartum, though onset can be immediate after delivery More than three quarter of the respondents did not perceived cigarette smoking as a risk factor for PPD. However, it has been reported that cigarette smoking is more common in patients with depression than in people in the general population (Breese *et al.* 2006). Furthermore, cigarette smoking has been found to be a valuable predictor of substance use which is also associated with increased risk of moderate



and severe depression. In addition, a survey of primiparous adolescents found significant statistical associations between PPD and the use of alcohol, illegal drugs, and cigarettes (Breese *et al.*, 2006) The age of the mother was also identified as a risk factor for developing PPD by most of the respondents. Schmidt *et al.* (2006) reported higher incidence of depressive symptoms in adolescent mothers than in older mothers. Furthermore, McClanahan, (2009) supported that teenage or adolescent mothers are more likely to develop depression during pregnancy and postpartum compared to older mothers (McClanahan, 2009; NIHCM, 2010). This is because of the unique challenges of this developmental period; as well as the fact that adolescent mothers tend to be more socially isolated, experience higher levels of parenting stress, have lower self-esteem and confidence, and experience family conflict, all of which have been found to be associated with depressive symptoms among adolescent mothers. The respondents noted that previous history of depression as well as family history of depression can result in PPD. Previous studies reported an increased risk of developing postpartum depression among women with previous history of depression and family history of depression (NIHCM, 2010). Respondents also attributed genetic makeup to development of PPD; which according to Corwin *et al.* (2010) may play a role in predisposing women to postpartum depression. However, the contribution of genetic polymorphisms to the development of postpartum depression remains unclear. Most of the nurse midwives indicated that lack of social support and poor marital relationship can predispose a woman to PPD. This is consistent with previous studies by Forman *et al.*, (2000) which found lack of social support as a strong risk factor for depressive symptoms postpartum. Despite the fact that various studies have shown that financial constraints is an important risk factor for postpartum depression, majority of the respondents maintained that poor economic status cannot result in PPD. Majority of the

respondents also stated that unplanned and unwanted pregnancy is not a risk factor to PPD. However, this is at variance with the study conducted by Limlomwongse and Liabsuetrakul (2006) that found negative attitudes towards pregnancy double the risk of PPD. Prenatal anxiety was not seen as risk factor to PPD by the respondents in this study. This may be due to their belief that every pregnancy comes with some level of anxiety. Nevertheless; numerous studies have linked prenatal anxiety to PPD (Sayil *et al.* 2006; NIHCM 2010; Mehta & Mehta, 2014). Majority affirmed that Edinburg Postnatal Depression Scale (EPDS) can be used to screen for PPD yet only about half of the respondents claimed that PPD tendency can be detected during pregnancy and Less than half of the respondents affirmed that a score of > 10 using the EPDS indicates depression. The Edinburg Postnatal Depression Scale (EPDS); is one of the most widely used self-report instruments to screen for depression in the postpartum and antenatal periods. However, there are several other instruments used by clinicians to diagnose PPD more definitively than the EPDS, these include Beck Depression Inventory, Center for Epidemiologic Studies Depression Scale, Zung's Self-rating Depression Scale, Hamilton Rating Scale for Depression (Breese *et al.*, 2006).

Majority of the respondents identified the symptoms of PPD correctly despite the fact that literatures have shown that most vulnerable women do not always receive vital care because the symptoms are overlooked or misdiagnosed. (Drozdowicz *et al.*, 2013). Furthermore, Amankwaa, (2003) pointed out that the undetected tendency of PPD may be due to clients' reluctant to expose ill-health, thus making it difficult for professionals to provide adequate diagnosis and treatment Even though it is well known that nurse midwives have important roles in determining postpartum depression and solving the problems associated with it, only few respondents in our study evaluated their

information level on PPD as high, although, majority signified willingness to receive PPD training. Stewart and Hanshaw (2002) suggested that limited information of nurses and midwives on PPD may lead them to lack confidence and disregard the importance of their roles. Therefore, midwives should have adequate information in order that they can fulfill their roles regarding PPD. The study also showed significant relationship between educational qualification of respondents and their level of information about PPD and its associated risk factors with  $p\text{-value}=0.005<0.05$ . This implies that level of education is an important determinant in the level of information of PPD among nurse-midwives

#### CONCLUSION

PPD remains a misunderstood illness that is often improperly diagnosed and treated. The findings of this study revealed that there remains a knowledge gap about PPD and its risk factors among nurse midwives.

Therefore, periodic suitable training programs on PPD should be developed for healthcare professionals to assess their patients for the early warning signs and risks of PPD, and undertake the appropriate courses of action. This is important for healthcare professionals especially for nurse-midwives who are the first point of contact during antenatal, labour and post natal period. Based on the findings, we recommend that health institutions organize training programs for nurses and other health workers for early recognition and treatment of women with PPD. Further training is required to ensure nurse-midwives competency in assessment and management of women experiencing postpartum depression. Finally, screening for PPD and education about PPD should become the standard for postpartum care and nurse-midwives should educate all pregnant women about the risk factor of PPD, symptoms of PPD and the resources available to treat it.

#### REFERENCE

- Amankwaa L.C (2003). Postpartum depression among African- American women: Issues in mental health nursing, 24:297-316.
- Babatunde T, (2010). An exploration of perception of postnatal depression in african women in Greenwich community health care. The Mary seacole project, lead public health community Nurse, 67-70.
- Beck C.T. (2002). Postpartum depression; A metasynthesis, university of Connecticut, storrs, USA. Qual health res. Vol.12 no. 4. 453-472.
- Breese, S. J., Beal, M. J., Shipman, S.B. M., Payton, M. E., Watson, G. H. (2006). Risk Factors for Postpartum Depression: A Retrospective Investigation at 4-Weeks Postnatal and a Review of the Literature The Journal of the American Osteopathic Association, Vol. 106, 193-198
- CDC. (2008). Centers for Disease Control and Prevention and National Association of Chronic Disease Directors. The state of mental health and aging in America Issue Brief 1: what do the data tell us?, 2008. Available at <http://apps.nccd.cdc.gov/MAHA/MahaHome.aspx>.
- Celestine-Balfour, S. (2014). Postpartum depression: An exploration of nurses' attitude and knowledge 2<sup>nd</sup> Commonwealth Nurses Federation Conference <http://www.commonwealthnurses.org/conference2014/Documents/SarahCelestine-Balfou>
- Corwin, E., Kohen, R., Jarrett, M., Stafford, B. (2010). The Heritability of Postpartum Depression. *Biological Research for Nursing*,
- Drozdowicz, E., Rodzoch, R., Matsumoto, H., Skalski, M., Wielgoś, M. Radziwoń-Zaleska, M. (2013). Postpartum depression—a review of

current knowledge Med Sci Tech, 2013;54:125-129

<http://www.cemlonline.com/download/index/idArt/889512> Ebeigbe, P.N, Akhigbe, K.O.(2008). "Incidence and associated risk factors of postpartum depression in a tertiary hospital in Nigeria" Niger postgrad. Med j. 15(1)-18.

Forman, D. N., Videbech, P., Hedegaard, M., Salvig, J. D., Secher, N. J. (2000). Postpartum depression: identification of women at risk. *British Journal of Obstetrics & Gynaecology*, 107, 1210-1217.

Goodman, J.H. (2004). "Paternal postpartum depression, its relationship to maternal postpartum depression, and implications for family health". *Journal of Advanced Nursing (JAN)* 45 (1): 26-35.

Halbreich, U, Karkun, S. (2006). Cross-cultural and social diversity of prevalence of postpartum depression and depressive symptoms. *Journal of Affective disorders*, 91:97-111.

Henshaw, C. Stewart, T. (2002). Midwives and perinatal health. *British Journal of Midwifery*; 10:117-121

Kavanaugh M, Halterman J, Montes G, Epstein M, Hightower A.D., Weitzman, M. (2006). Maternal depressive symptoms are adversely associated with prevention practices and parenting behaviors for preschool children. *Ambulatory pediatrics*, 6:32-37.

Limlomwongse, N., Liabsuetrakul, T. (2006). Cohort study of depressive moods in Thai women during late pregnancy and 6-8 weeks of postpartum using the Edinburgh postnatal depression scale (EPDS). *Arch Womens Ment Health* 2006; 9:131-8.

Mancini, F., Carlson, C.N.D., Albers, L., (2007). Use of postpartum depression screening scale in a

collaborative obstetric practice. *Journal of midwifery womens` health* , 52:429-439.

McClanahan, K.K. (2009). Depression in Pregnant Adolescents: Considerations for Treatment. *Journal of Pediatric and Adolescent Gynecology*, 22:59-64.

Mehta, S., Mehta, N. (2014). An Overview of Risk Factors Associated to Post-partum Depression in Asia. *Mental Illness*, 6(1), 5370. <http://doi.org/10.4081/mi.2014.5370>

NIHCM Foundation Issue Brief (2010). Identifying and Treating Maternal Depression: Strategies & Considerations for Health Plans NIHCM Issue Brief

Rothman, R. (2006). The health visitor's role and postnatal depression: an overview. *British Journal of Midwifery*, 14(11):658-66

Sarah, J. Breese, M. (2006). "Risk Factors for Postpartum Depression: A Retrospective Investigation at 4-Weeks Postnatal and a Review of the Literature" *The Journal of the American Osteopathic Association (JAOA)* 106 (4): 193-8. <http://www.jaoa.org/cgi/content/full/106/4/193>.

Sayil, M., Gure, A., Ucanok, Z. (2006). First time mothers' anxiety and depressive symptoms across the transition to motherhood: associations with maternal and environmental characteristics. *Women Health*, 44:61-77

Schmidt, R.M., Weimann, C.M., Rickert, VI, O'Brian - Smith, E. (2006). Moderate to severe depressive symptoms among adolescent mothers followed four years postpartum. *Journal of Adolescent Health*, 38:712-718.

Seda, N., Naile, B. (2010). Postnatal depression; Midwives and nurses' knowledge and practice. Erciyes Elect. ISSN 2147-1789

World Health Organization-U.N. Fund for Population Activities. (2007). UNFPA-WHO consensus statement on maternal mental health and child survival/health/development in resource-constrained settings for achieving the millennium development goals. Geneva, Switzerland: WHO.