# ASSESSING KNOWLEDGE ON POST-PARTUM DEPRESSION AMONG MOTHERS AT THE TAMALE TEACHING HOSPITAL

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#### Abstract

Postpartum depression, also referred to as postnatal depression, is a non-psychotic depressive disorder of variable severity and it can initiate as early as two weeks after delivery and can persist indefinitely if untreated and has been found to cause distress and impairs a mother's ability to carry out her normal duties, care for herself and care for her haby. The study sought to assess the knowledge of postpartum depression among pregnant women at the Tamale Teaching Hospital. The study employed a descriptive cross-sectional study design. The study population included mothers who were attending postnatal care at the Tamale Teaching Hospital. 132 participants were consecutively sampled for the study. Completed questionnaire was entered into Statistical Package for the Social Science (SPSS version 22.00). Descriptive statistics including mean, percentages, and frequencies were calculated and presented in graphs and tables for quantitative variables. Cross tabulation using chi square was used to determine the association between dependent and independent variables. The mean age of respondents was 22 years. Majority of the respondents (95.3%) were between the ages of 25-34 years. Majority of respondents have ever heard of postpartum depression (63.6%) with health facility being the most cited source of information. The preferred sex of baby mothers wanted to have during and after pregnancy was significantly associated with postpartum depression with p values = <0.001. Also, unplanned pregnancy also showed a borderline association with postpartum depression with a p value = 0.051. Family support in taking care of the baby's everyday needs was significantly associated with postpartum depression with p value =0.033. Mothers who did not get support from their families in taking care of their babies were more likely to experience depression than those who get support from their families. Mothers who were 35 years and above had increased odds of getting postpartum depression as compared to those who were 25 to 34 years (OR=2.63; p<0.01). On the whole the study showed that partner support and maternal factors such as age and unplanned pregnancies were identified as the main determinants of postpartum depression among postpartum mothers seeking care at the Tamale Teaching Hospital.

## Keywords: Postpartum, Depression, Risk factors, Knowledge

#### Introduction

Postpartum depression, also referred to as postnatal depression, is a non-psychotic depressive disorder of variable severity and it can initiate as early as two weeks after delivery and can persist indefinitely if untreated The disorder can cause distress and impairs a mother's ability to carry out her normal duties, care for herself and care of her baby (Matsuda et al., 2021). It is a universal public health concern because of its distressing effects on the mother, child and family. Depressive disorders are among the leading causes of disability worldwide (Evans-Lacko et al., 2018). Postpartum depression (PPD) is one of the world's increasing epidemics, and attack roughly 11 -42 % of postpartum women worldwide. It has been re-

ported to affect women worldwide 10-27% in Western societies, 15.8% Arab countries, 16% in Zimbabwe, 34.7% in South Africa, 11.2% in China, 7% in Japan, and 18% in Pakistan (Mina et al., 2012). Most women experience the condition within 6 weeks postpartum. It is associated with loss of interest, worries, loss of energy, feeling of irrelevance and guilt (Monzon, Lanza di Scalea & Pearlstein, 2014). About 60% of mothers across cultures experience postpartum depression (Monzon, Lanza di Scalea & Pearlstein, 2014), with high prevalence among developing countries compared to developed countries (Bener, Gerber & Sheikh, 2012).

Still birth, spontaneous abortion, low social support and financial constraint are some of the causal factors to

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developing postpartum depression among women in Ghana (Guo et al., 2013). Women with postpartum depression have relationship challenges with their children, which has negative impact on child development from infancy to adolescence (Slomian et al., 2019). Families and relatives of women with postpartum depression experiences distraction in their relationship express feelings of frustration and are at a higher risk for mental health problems (De Magistris, Carta & Fanos, 2013). Despite the limited research, findings in this area reveal the high burden of ill health the mother experiences during the postpartum period (Patabendige, Athulathmudali & Chandrasinghe, 2020). Historically, PPD was estimated to be absent in nonwestern countries because of the presence of social support (Jones & Coast 2013). However recent estimates suggest a much higher prevalence of PPD in South Asia; 36% in Pakistan compared to 13% in North America and western European countries (Jones & Coast 2013). In the African continent, the incidence rate of postpartum depression is estimated between 10% and 32%. Focusing on Ghana, the prevalence is approximately 27% (Slomian et al., 2019).

Studies suggest that postpartum depression is often ignored and misdiagnosed and most vulnerable women are hardly recognized during pregnancy or after delivery, and therefore do not always receive the needed care (Yusuff et al., 2015). This is especially common in developing countries where mental health is generally ignored (Kopinak, 2015).

In Ghana, studies show that Postpartum Depression (PPD) is prevailing and has negative infant outcomes (Tineke et al., 2012). A study in Ghana by Scorza et al. (2015) on prevalence of postpartum depression revealed that, women attributed postpartum depression to lack of social support, domestic problems and poverty. "Thinking too much" was the term used to delineate postpartum depression. Similarly, a study on illness perceptions of depressed mothers found out that women attributed their depression to their own state of mind, lack of sleep, changes in pregnancy, and difficulties in adopting and adjusting to pregnancy and child birth (Reardon, 2018). The current study therefore sought to assess the level of knowledge of postpartum depression among mothers and also examine the perception of mothers on the causes of postpartum depression and as well assess the risk factors of postpartum depression among mothers at the Tamale Teaching Hospital.

## **Materials and Methods**

## Study Design

The study employed a descriptive cross-sectional study design. This was to enable the researchers assess the knowledge on postpartum depression among women attending postnatal care at the Tamale Teaching Hospital at the same point in time.

## Study Site

The study was conducted at the Tamale Teaching Hospital which is the main referral centre in the northern part of Ghana. Tamale Teaching Hospital also serves as a center of excellence where undergraduate and graduate programs in Medicine, Nursing and Nutrition are trained.

The hospital has a 400-bed capacity and offer General and Specialised services

The Tamale Metropolis, where TTH is located, is mostly inhabited by the Mole-Dagomba linguistic group. According to the 2010 population census, the metropolis is inhabited by about 247,946 people. It is quite large and covers a land mass of approximately 750 km2 which is about 13% of the entire area of the former Northern Region. The Metropolitan area shares boundaries with Sagnarigu District to the west-north, Mion District to the east, East Gonja District to the south and Central Gonja District to the south-west. The economy of the Tamale metropolis is largely agriculture driven and about sixty percent (60%) of the entire inhabitants engage in agriculture (Ghana Statistical Service, 2010).

## Study Population

The study population included mothers with babies less than six weeks and were attending postnatal clinic at the Tamale Teaching Hospital. The sixth week after delivery was considered an ideal time for screening for postpartum depression (PPD) because many of the symptoms of PPD would have begun to occur.

### Sample Size Determination and Sampling

In all 132 respondents were targeted for data collection. This figure was arrived at using the Snedecor & Cochrane, 1989) formulae for sample size calculation. A consecutive sampling technique was used in sampling respondents for the study. All mothers with babies less than six weeks who consented to participate were included. Mothers who delivered elsewhere and were at TTH for care, as well as those who were critically ill were not included in the study.

Questionnaires were used to collect data. The questionnaire was structured in three parts, socio-demographic, knowledge on postpartum depression, and risk factors of postpartum depression. The questionnaire comprised both closed and open-ended questions. All the questionnaires were written in English and translated in to the most common language spoken in Tamale for those who could not read and write English.

Before administration, the questionnaire for the study was pre-tested with 20 mothers at the Tamale Central Hospital. Based on the responses from the pre-testing, the questionnaire was modified to ensure easy comprehensibility and understanding by participants.

## Data Analysis

Questionnaires were checked for completeness and errors. Completed questionnaire was entered into Statistical Package for the Social Science (SPSS version 22.00). Descriptive statistics including mean, percentages, and frequencies were calculated and presented in graphs and tables for quantitative variables. Cross tabulation using chi square was used to determine the association between dependent and independent variables. Multiple logistic regression model was estimated to identify determinants of PPD. A p-value <0.05 was considered as statistically significant.

Ethical clearance was sought from the Tamale Teaching Hospital's Ethical Review Committee.

#### Results

#### Socio-Economic Characteristics of Respondents

The mean age of respondents was 22 years. Majority of the respondents (95.3%) were between the ages of 25-34 years. Majority of the respondents were Dagomba (46.2%), 14.4% were Mamprusi, Hausa and Fulani were 7.9% each respectively; while 12.9% of respondents were other tribes. About 78.0% of respondents were married, 15.2% were singles, 3.0% were divorcees and 0.8% were widows.

About 9.1% of the respondents had primary education, 31.8% had tertiary education, 25.8% had senior high education and 18.9% had junior high education with only 14.4% of respondents not having any form of formal education. With reference to employment status of respondents, 45.5% of respondents were traders, 22.0% civil servants with farmers being the least (2.3%) among the respondents. About half of the respondents (50.0%) had an average monthly income of between 10-200 Ghana Cedis with only 15.9% of them earning more than 1000 Ghana cedis a month. Also, 55.3% of respondents were Muslim, 31.8% Christians and 12.9% traditionalists. Most of the respondents were in their 6th week of postpartum with 3 weeks of postpartum being the least (7.6%) (Table 1).

## Partners' Support

As shown in Table 5 in the appendix section, majority of respondents had very supportive partners (72.7%), while

25% sometimes had support from their partners. About 2.3% of the respondents had unsupportive partners. About 90.2% of the respondents mentioned that the father of their babies provides financial support for them

Table 1: Socio-Economic Characteristics of Respondents

Age	Variable	Frequency	Percent
15-24 37 28.0 25-34 70 53.0 35-44 25 18.9  Tribe  Dagomba 61 46.2 Gonja 15 11.4 Mumprusi 19 14.4 Hausa 10 7.6 Fulani 10 7.6 Others 17 12.9  Marital Status Single 20 15.2 Married 103 78.0 Divorced 4 3.0 Widow 1 8 Co-habitation 4 3.0  Educational background not educated 19 14.4 Primary 12 9.1 junior high 25 18.9 senior high 34 25.8 Tertiary 42 31.8  Employment status Unemployed 25 18.9 Trader 60 45.5 Civil servant 29 22.0 Student 8 6.1 Farmer 3 2.3 Others 7 5.3  Average monthly income 10-200 66 50.0 210-400 18 13.6 410-600 13 9.8 610-800 5 3.8		1 2	
Tribe           Dagomba         61         46.2           Gonja         15         11.4           Mumprusi         19         14.4           Hausa         10         7.6           Fulani         10         7.6           Others         17         12.9           Marital Status         Single         20         15.2           Married         103         78.0           Divorced         4         3.0           Widow         1         .8           Co-habitation         4         3.0           Educational back-ground             not educated         19         14.4           Primary         12         9.1           junior high         25         18.9           senior high         34         25.8           Tertiary         42         31.8           Employment status             Unemployed         25         18.9           Trader         60         45.5           Civil servant         29         22.0           Student         8         6.1           Farmer <td></td> <td>37</td> <td>28.0</td>		37	28.0
Tribe         Dagomba         61         46.2           Gonja         15         11.4           Mumprusi         19         14.4           Hausa         10         7.6           Fulani         10         7.6           Others         17         12.9           Marital Status         Single         20         15.2           Married         103         78.0           Divorced         4         3.0           Widow         1         .8           Co-habitation         4         3.0           Educational back-ground             not educated         19         14.4           Primary         12         9.1           junior high         25         18.9           senior high         34         25.8           Tertiary         42         31.8           Employment status             Unemployed         25         18.9           Trader         60         45.5           Civil servant         29         22.0           Student         8         6.1           Farmer         3         <	25-34	70	53.0
Dagomba   61	35-44	25	18.9
Dagomba   61	Tribe		
Gonja       15       11.4         Mumprusi       19       14.4         Hausa       10       7.6         Fulani       10       7.6         Others       17       12.9         Marital Status         Single       20       15.2         Married       103       78.0         Divorced       4       3.0         Widow       1       .8         Co-habitation       4       3.0         Educational background       1       .8         not educated       19       14.4         Primary       12       9.1         junior high       25       18.9         senior high       34       25.8         Tertiary       42       31.8         Employment status       Unemployed       25       18.9         Trader       60       45.5         Civil servant       29       22.0         Student       8       6.1         Farmer       3       2.3         Others       7       5.3         Average monthly income       10-200       66       50.0         210-400       18 <td></td> <td>61</td> <td>46.2</td>		61	46.2
Mumprusi       19       14.4         Hausa       10       7.6         Fulani       10       7.6         Others       17       12.9         Marital Status         Single       20       15.2         Married       103       78.0         Divorced       4       3.0         Widow       1       .8         Co-habitation       4       3.0         Educational background       19       14.4         Primary       12       9.1         junior high       25       18.9         senior high       34       25.8         Tertiary       42       31.8         Employment status       Unemployed       25       18.9         Trader       60       45.5         Civil servant       29       22.0         Student       8       6.1         Farmer       3       2.3         Others       7       5.3         Average monthly income       10-200       66       50.0         210-400       18       13.6         410-600       13       9.8         610-800       5		15	11.4
Hausa 10 7.6 Fulani 10 7.6 Others 17 12.9  Marital Status Single 20 15.2 Married 103 78.0 Divorced 4 3.0 Widow 1 8 Co-habitation 4 3.0  Educational background not educated 19 14.4 Primary 12 9.1 junior high 25 18.9 senior high 34 25.8 Tertiary 42 31.8  Employment status Unemployed 25 18.9 Student 8 6.1 Farmer 3 2.3 Others 7 5.3  Average monthly income  10-200 66 50.0 210-400 18 13.6 410-600 13 9.8 610-800 5 3.8		19	14.4
Fulani       10       7.6         Others       17       12.9         Marital Status       Single       20       15.2         Married       103       78.0         Divorced       4       3.0         Widow       1       .8         Co-habitation       4       3.0         Educational back-ground           not educated       19       14.4         Primary       12       9.1         junior high       25       18.9         Senior high       34       25.8         Tertiary       42       31.8         Employment status          Unemployed       25       18.9         Trader       60       45.5         Civil servant       29       22.0         Student       8       6.1         Farmer       3       2.3         Others       7       5.3         Average monthly income       10-200       66       50.0         210-400       18       13.6         410-600       13       9.8         610-800       5       3.8	-	10	7.6
Marital Status       Single       20       15.2         Married       103       78.0         Divorced       4       3.0         Widow       1       .8         Co-habitation       4       3.0         Educational background       3.0         not educated       19       14.4         Primary       12       9.1         junior high       25       18.9         senior high       34       25.8         Tertiary       42       31.8         Employment status       Unemployed       25       18.9         Trader       60       45.5         Civil servant       29       22.0         Student       8       6.1         Farmer       3       2.3         Others       7       5.3         Average monthly income       10-200       66       50.0         210-400       18       13.6         410-600       13       9.8         610-800       5       3.8			
Single       20       15.2         Married       103       78.0         Divorced       4       3.0         Widow       1       .8         Co-habitation       4       3.0         Educational back-ground       3.0         not educated       19       14.4         Primary       12       9.1         junior high       25       18.9         senior high       34       25.8         Tertiary       42       31.8         Employment status       Unemployed       25       18.9         Trader       60       45.5         Civil servant       29       22.0         Student       8       6.1         Farmer       3       2.3         Others       7       5.3         Average monthly income       10-200       66       50.0         210-400       18       13.6         410-600       13       9.8         610-800       5       3.8	Others	17	12.9
Married       103       78.0         Divorced       4       3.0         Widow       1       .8         Co-habitation       4       3.0         Educational back-ground       3.0         not educated       19       14.4         Primary       12       9.1         junior high       25       18.9         senior high       34       25.8         Tertiary       42       31.8         Employment status       Unemployed       25       18.9         Trader       60       45.5         Civil servant       29       22.0         Student       8       6.1         Farmer       3       2.3         Others       7       5.3         Average monthly income       10-200       66       50.0         210-400       18       13.6         410-600       13       9.8         610-800       5       3.8	Marital Status		
Married       103       78.0         Divorced       4       3.0         Widow       1       .8         Co-habitation       4       3.0         Educational back-ground       3.0         not educated       19       14.4         Primary       12       9.1         junior high       25       18.9         senior high       34       25.8         Tertiary       42       31.8         Employment status       Unemployed       25       18.9         Trader       60       45.5         Civil servant       29       22.0         Student       8       6.1         Farmer       3       2.3         Others       7       5.3         Average monthly income       10-200       66       50.0         210-400       18       13.6         410-600       13       9.8         610-800       5       3.8	Single	20	15.2
Widow       1       .8         Co-habitation       4       3.0         Educational back-ground       19       14.4         Primary       12       9.1         junior high       25       18.9         senior high       34       25.8         Tertiary       42       31.8         Employment status       Unemployed       25       18.9         Trader       60       45.5         Civil servant       29       22.0         Student       8       6.1         Farmer       3       2.3         Others       7       5.3         Average monthly income       10-200       66       50.0         210-400       18       13.6         410-600       13       9.8         610-800       5       3.8		103	78.0
Co-habitation       4       3.0         Educational background       19       14.4         not educated       19       14.4         Primary       12       9.1         junior high       25       18.9         senior high       34       25.8         Tertiary       42       31.8         Employment status       Unemployed       25       18.9         Trader       60       45.5         Givil servant       29       22.0         Student       8       6.1         Farmer       3       2.3         Others       7       5.3         Average monthly income       10-200       66       50.0         210-400       18       13.6         410-600       13       9.8         610-800       5       3.8	Divorced	4	3.0
Educational background         14.4           Primary         12         9.1           junior high         25         18.9           senior high         34         25.8           Tertiary         42         31.8           Employment status         Unemployed         25         18.9           Trader         60         45.5           Civil servant         29         22.0           Student         8         6.1           Farmer         3         2.3           Others         7         5.3           Average monthly income         10-200         66         50.0           210-400         18         13.6           410-600         13         9.8           610-800         5         3.8	Widow	1	.8
ground         19         14.4           Primary         12         9.1           junior high         25         18.9           senior high         34         25.8           Tertiary         42         31.8           Employment status         Unemployed         25         18.9           Trader         60         45.5           Civil servant         29         22.0           Student         8         6.1           Farmer         3         2.3           Others         7         5.3           Average monthly income         10-200         66         50.0           210-400         18         13.6           410-600         13         9.8           610-800         5         3.8	Co-habitation	4	3.0
not educated       19       14.4         Primary       12       9.1         junior high       25       18.9         senior high       34       25.8         Tertiary       42       31.8         Employment status       Unemployed       25       18.9         Trader       60       45.5         Civil servant       29       22.0         Student       8       6.1         Farmer       3       2.3         Others       7       5.3         Average monthly income       10-200       66       50.0         210-400       18       13.6         410-600       13       9.8         610-800       5       3.8			
Primary       12       9.1         junior high       25       18.9         senior high       34       25.8         Tertiary       42       31.8         Employment status       31.8         Unemployed       25       18.9         Trader       60       45.5         Civil servant       29       22.0         Student       8       6.1         Farmer       3       2.3         Others       7       5.3         Average monthly income       10-200       66       50.0         210-400       18       13.6         410-600       13       9.8         610-800       5       3.8	_		
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senior high     34     25.8       Tertiary     42     31.8       Employment status     18.9       Unemployed     25     18.9       Trader     60     45.5       Civil servant     29     22.0       Student     8     6.1       Farmer     3     2.3       Others     7     5.3       Average monthly income       10-200     66     50.0       210-400     18     13.6       410-600     13     9.8       610-800     5     3.8	•		
Tertiary     42     31.8       Employment status     18.9       Unemployed     25     18.9       Trader     60     45.5       Civil servant     29     22.0       Student     8     6.1       Farmer     3     2.3       Others     7     5.3       Average monthly income     10-200     66     50.0       210-400     18     13.6       410-600     13     9.8       610-800     5     3.8	-	25	
Employment status         Unemployed         25         18.9           Trader         60         45.5           Civil servant         29         22.0           Student         8         6.1           Farmer         3         2.3           Others         7         5.3           Average monthly income         10-200         66         50.0           210-400         18         13.6           410-600         13         9.8           610-800         5         3.8	_	34	25.8
tus       Unemployed     25     18.9       Trader     60     45.5       Civil servant     29     22.0       Student     8     6.1       Farmer     3     2.3       Others     7     5.3       Average monthly income       10-200     66     50.0       210-400     18     13.6       410-600     13     9.8       610-800     5     3.8		42	31.8
Unemployed     25     18.9       Trader     60     45.5       Civil servant     29     22.0       Student     8     6.1       Farmer     3     2.3       Others     7     5.3       Average monthly income       10-200     66     50.0       210-400     18     13.6       410-600     13     9.8       610-800     5     3.8			
Trader       60       45.5         Civil servant       29       22.0         Student       8       6.1         Farmer       3       2.3         Others       7       5.3         Average monthly income       10-200       66       50.0         210-400       18       13.6         410-600       13       9.8         610-800       5       3.8		25	18.9
Civil servant     29     22.0       Student     8     6.1       Farmer     3     2.3       Others     7     5.3       Average monthly income     0-200     66     50.0       210-400     18     13.6       410-600     13     9.8       610-800     5     3.8			
Student     8     6.1       Farmer     3     2.3       Others     7     5.3       Average monthly income     0-200     66     50.0       210-400     18     13.6       410-600     13     9.8       610-800     5     3.8			
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Others     7     5.3       Average income     monthly income       10-200     66     50.0       210-400     18     13.6       410-600     13     9.8       610-800     5     3.8			
Average income     monthly income       10-200     66     50.0       210-400     18     13.6       410-600     13     9.8       610-800     5     3.8			
income       10-200     66     50.0       210-400     18     13.6       410-600     13     9.8       610-800     5     3.8		/	5.3
10-200       66       50.0         210-400       18       13.6         410-600       13       9.8         610-800       5       3.8			
210-400       18       13.6         410-600       13       9.8         610-800       5       3.8		66	50.0
410-600     13     9.8       610-800     5     3.8			
610-800 5 3.8			
Above 1000 21 15.9			

Table 1 cont.: Socio-Economic Characteristics of Respondents

Religious bac	k-	
ground		
Christian	42	31.8
Muslim	73	55.3
Traditionalist	17	12.9
Weeks of pos	st-	
partum		
1 week	23	17.4
2 weeks	24	18.2
3 weeks	10	7.6
4 weeks	16	12.1
5 weeks	13	9.8
6 weeks	46	34.8
Residential area	ı	
Vitting	20	15.2
Fuo	10	7.6
Dobakpa	4	3.0
Kukuo	14	10.6
Lamashegu	6	4.5
Target	11	8.3
Others	67	50.8

and their babies, 6.1% indicated that they do not get financial support from the father of their babies; the remaining 3.7% did not answer the question. Only 8.3% of them indicated their partners were not concerned about their babies, 86.4% mentioned that their partners are concerned about their babies, with 5.3% no response.

With regards to financial difficulties during and after pregnancy, only 24.2% of the study participants had financial difficulties during and after pregnancy. Also, 92.4% of them had a cordial relationship with their husband's families, 3.0% had bad relationship with husband's family while the remaining 4.6% did not respond to this question (Table 2).

## Knowledge on Postpartum Depression

With reference to the respondents' knowledge on postpartum depression, the results indicate that majority of respondents have ever heard of postpartum depression (63.6%) with health facility being the most cited source of information. A significant number of respondents did not know when women can develop postpartum depression (39.4%), while 34.8% think women can develop postpartum depression only immediately after delivery, 10.6% think women can develop postpartum depression from delivery till 6weeks and 11.4% think women can develop postpartum depression only 6 weeks after delivery.

With respect to treatment for PPD, 11.4% indicated that there is no treatment, 53.0% indicated that there is treat-

Table 2: Partners' Support

Variables	Frequency	Percent
Does the family support in taking care of the baby's everyday needs?		
very supportive	96	72.7
Sometime	34	25.0
Unsupportive	3	2.3
Does the father of your baby provide financial support for you and the baby?		
Yes	119	90.2
No	8	6.1
Is the father concern about the baby		
Yes	114	86.4
No	11	8.3
Do you have any financial difficulties during and after delivery?		
Yes	32	24.2
No	98	74.2
What is the relationship between you and husband family?		
cordial	122	92.4
Bad	4	3.0

Table 3: Respondents Knowledge on Postpartum Depression

Variables		Per-
	Freq.	cent
Have you ever heard of postpartum		
depression?		
Yes	84	64
No	44	33
Where the respondent obtained the		
information		
health facility	38	29
family and friends	28	21
mass media	20	15
others specify	3	2
When do you think women can		
develop Postpartum Depression? Only immediately after delivery	46	35
Only infinediately after delivery	40	
From delivery till 6weeks	14	11
Only 6 weeks following delivery	15	11
Do not know  What do you think can cause post-	52	39
partum depression		
Poor economic status	24	18
Poor social support	19	14
Stress/mood changes	32	24
History of depression	13	10
Poor partner support	9	7
Pregnancy complications and outcome	6	5
Other	1	.8
Do you believe there are factors that		
could Influence postpartum depression	on	
Yes	79	60
No	7	5
I do not know	39	30
Are there treatments for postpartum		
depression	70	E 2
Yes	70	53
No	15	11
I do not know	45	34

ment while 34.1% stated that they did not know whether there is treatment or not. Most of the women (59.8%) agreed that there are some factors contributing to PPD. According to them the factors influencing PPD included stress and mood changes (24.2%), poor economic status (18.2%) and poor social support (14.4%) (Table 3).

## **Obstetric Outcomes**

24.2% of respondents indicated that their babies were born with some form of congenital malformations while majority of them (75.8%) indicated otherwise. Majority of respondents (66.7%) said that the sex of their babies was the sex they wanted to have before and during pregnancy. However, 33.3% of them said the sex of their babies was not the sex they wanted before and during pregnancy.

Also, some of the respondents indicated that their pregnancies were not planned (26.5%). Majority of them had a safe vaginal delivery at a health facility (58.3%). About 90.9% of them had no complication during labour (Table 4).

## Association Between Obstetric Outcomes and Post-Partum Depression

Again, the study found that not getting the preferred sex mothers wanted to have during and after pregnancy was significantly associated with postpartum depression with p values = <0.001.

Also, unplanned pregnancy also showed a borderline association with postpartum depression with a p value = 0.051.

There was however no relationship between other factors such as mode of delivery, complications with either the mother or the baby and baby being born with congenital diseases or malformations (Table 5).

## Association Between Partners' Support and PPD

A cross tabulation was carried out to find out the relationship between partners relationship and support with postpartum depression.

It was revealed that family support in taking care of the baby's everyday needs was significantly associated with postpartum depression with p value =0.033.

Mothers who did not get support from their families in taking care of the babies were more likely to experience depression than those who get support from their families. Also, financial difficulties during and after delivery was significantly associated with postpartum depression with p value = 0.041. Other factors such as difficulty in breast feeding, relationship with baby father's family and health condition during index child's birth were not asso-

Table 4: Respondents Knowledge on Postpartum Depression

Variables	Freq.	%
Was your baby born with any		
Congenital diseases or malformations		
Yes	32	24
No	100	76
Is your baby the sex that you wanted to	)	
have before and during your pregnancy	y	
Yes	88	67
No	44	33
Was this pregnancy planned		
Yes	95	72
No	35	27
How did you deliver this baby		
safe vagina delivery at home	29	22
Emergency caesarean section	18	14
Safe vaginal delivery at a health facility	77	58
Elective caesarean section	8	6
Were there any complications either	with Yo	ou or
the baby during delivery		
No	120	91
yes, complications with me	9	7
yes, complications with the baby	3	2

ciated with postpartum depression (Table 6).

## Sociodemographic Characteristics Influencing Postpartum Depression

The age, marital status, and income status of the respondents influenced their experience of postpartum depression. Respondents who were 35 years and above had increased odds of getting postpartum depression compared to those who were 25 to 34 years (OR=2.63; p<0.01). Also, being married decreased the likelihood of getting postpartum depression as compared to those who were single or divorced (OR= 0.33; p=0.022). Increased income from GHS 410 and above as compared to those who had average monthly income of GHS 10-200 were also found to decrease the likelihood of postpartum depression (OR=0.39; P<0.001) (Table 7).

## Obstetric Factors Influencing Postpartum Depression

As shown in Table 8 under appendix, women who had unplanned pregnancies were more likely to suffer post-partum depression as compared to those who had planned pregnancies (OR=2.14; p<0.001) and this association was still witnessed when the other factors were adjusted for (OR=1.91; p<0.01).

Table 5: Cross Tabulation of Obstetric Outcomes and Postpartum Depression

		PPD			
Variables Re	esponse	No	Yes	Total	P-values
Was your baby born with any	Yes	23	9	32	0.52
congenital diseases or malfor-	No	65	34	99	
Is your baby the sex that you	Yes	88	0	88	< 0.001
wanted to have before and dur-	No	0	43	43	
Was this pregnancy planned	Yes	65	28	93	0.051
	No	19	13	32	
How did you deliver this baby	Safe vagina delivery at home	18	9	27	0.81
	Emergency caesarean section	10	7	17	
	Safe vaginal delivery at a health	53	23	76	
	facility				
	Elective caesarean section	6	2	8	
Were there any complications	No	78	41	119	0.21
either with you or the baby dur-	Yes, complications with me	7	1	8	
	Yes, complications with the baby	3	0	3	

Table 6: Cross Tabulation of Partners Support and Postpartum Depression

		PPD		_	_
Variables	Response	No	Yes	_ Total	P-value
Does the family support in taking care	very supportive	67	28	95	0.033
of the baby's everyday needs?	sometime	19	11	30	
	unsupportive	0	3	3	
Does the father of your baby provide	yes	82	36	118	0.410
financial support for you and the baby?	no	4	4	8	
Is the father concerned about the baby?	yes	78	35	113	0.799
	no	8	3	11	
Do you have breastfeeding difficulties?	yes	4	0	4	0.148
	no	77	41	118	
Do you have any previous medical con-	yes	5	0	5	0.109
dition for the index child?	no	78	41	119	
Do you have any financial difficulties	yes	21	11	32	0.041
during and after delivery?	no	67	30	97	
What is the relationship between you	cordial	82	39	121	0.456
and your husband's family?	bad	2	2	4	

Table 7: Sociodemographic Influencing Postpartum Depression

			OR (95%	<b>∕₀P-Values</b>		P-Values
Variables	Categories		CI)		AOR (95% CI)	)
Age	<25	1			1	
	25-35	0.97	(0.52, 1.46)	0.072	0.95 (0.53, 1.58)	0.080
	35 and above	2.63	(1.33, 4.34)	< 0.001	2.24 (1.01, 4.28)	0.032
Marital status	Single	1			1	
	Married	0.33	(0.16, 0.61)	0.022	0.43 (0.13, 0.84)	0.061
	Divorced	0.45	(0.22, 0.90)	0.071	0.27 (0.11, 0.69)	0.412
Average monthly	<ghs 10-200<="" td=""><td>1</td><td></td><td></td><td>1</td><td></td></ghs>	1			1	
				0.841		0.055
Income	GHS 210.00 -	0.56	(0.39, 1.12)		0.80 (0.44, 1.44)	
	GHS 410 - 600	0.39	(0.22, 0.89)	< 0.001	0.67 (0.32, 1.43)	< 0.001
	Above 600	0.45	(0.26, 0.97)	< 0.001	0.60 (0.28, 1.27)	0.023

*p*<0.05; *p*<0.01; *p*<0.001

# Influence of Partners' Support on Postpartum Cepression

As shown in Table 9 under appendix, mothers who described the support from baby's father in taking care of baby as unsupportive had increased risk of suffering PPD (OR=4.22; p<0.001).

However, when family support and father's concern about baby were adjusted, the influence of provision of financial support was no more significant.

Table 8: Obstetric Factors which Influence Postpartum Depression

	Respons-		P-Values		P-
Variables	es	OR (95% CI)		AOR (95% CI)	Values
Was this pregnancy					
planned	Yes	1		1	
			< 0.001		< 0.001
	No	2.1 (1.40, 3.23)		1.91 (1.23, 2.94)	
How did you deliver this					
baby	SVD at home	1	0.045	1	0.040
		1.2	0.315		0.818
	Emergency CS	9 (0.85, 1.94)		1.20 (0.78, 1.87)	0.040
	SVD at a health	0.2	0.077		0.068
	facility	3 (0.04, 1.17)	0.049	0.22 (0.04, 1.15)	0.004
		0.0	0.062		0.091
	Elective CS	8 (0.15, 0.46)		0.09 (0.01, 0.48)	
Were there any complica-					
tions either with you or					
the baby during delivery	Yes	1		1	
, ,		1.1	0.991		0.615
	No	5 (0.77, 1.72)		1.03 (0.67, 1.58)	
Baby born with any	Yes	1		1	
		0.5	0.067		0.081
congenital diseases	No	2 (0.31, 0.82)		0.54 (0.31, 0.85)	

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

## Discussion

About (95.3%) of respondents were between the ages of 25-34 years with a greater percentage of respondents being Dagombas (46.2). Majority of respondents had at least primary education (85.6%). With reference to employment status of respondents, 45.5% of them were traders, 22.0% civil servants with farmers being the least (2.3%) among the respondents. About half of respondents (50.0%) had an average monthly income of between 10-200 Ghana cedis with only 15.9% of them earning more than 1000 Ghana cedis a month.

With regards to knowledge of respondents on Postpartum Depression, the study revealed that the majority of the women interviewed had heard of postpartum depression. About one-third of respondents however had never heard of PPD, indicating a wide knowledge gap of postpartum depression among the women in the study area. The sources of information on postpartum depression stated by the respondents included health facility, family

and friends and mass media. The most cited source of information on postpartum depression was health facilities followed by family and friends.

Some respondents believed women can develop postpartum depression only immediately after delivery whereas others stated after delivery until 6 weeks. A little over one-third however had no idea on the period a woman could develop PPD. 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). Knowledge on treatment and cure for PPD also varied among respondents with about one-third having no idea of the existence of treatment or cure for PPD. Beliefs regarding factors influencing PPD was high among the women although almost one-third of respondents had no idea. Some factors cited

Table 9: Influence of Partners' Support on Postpartum Depression

Varia-			P- Val-		Р -
bles	Responses	OR (95% CI)	ues	AOR (95% CI)	Values
Does the family sup- port in taking care of the baby's everyday					
needs	Very supportive	1		1	
	Unsupportive	4.72 (2.52, 9.20) 18.15 (2.39,	<0.001 0.063	0.70 (0.18, 1.99)	0.055 0.087
	Sometimes	45.96)		1.97 (0.10, 20.01)	
Do you have any fi- nancial difficulties during and after deliv-		,		, , ,	
ery	Yes	1		1	
·	Somewhat	6.65 (5.10, 14.23)	0.051	4.63 (1.42, 9.29)	0.073
Is the father concerned about the baby	Yes	1		1	
	No	7.89 (3.68, 16.96) 0	.152	1.60 (0.34, 6.56)	0.091

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

by respondents include stress, mood changes, history of PPD, poor partner relationship/support and poor socio-economic status. Majority of the respondents identified the symptoms of PPD correctly despite the fact that literature has shown that most vulnerable women do not always receive vital care because the symptoms are overlooked or misdiagnosed (Babatunde & Moreno-Leguizamon, 2012).

The age, marital status, and income status of the respondents were found to be associated with postpartum depression. For instance, respondents who were 35years and above had increased odds of getting postpartum depression compared to those who were 25 to 34 years. This finding contradicts the findings from previous studies which found that young maternal age was identified as a risk factor for developing PPD. For example, Lanzi et al. (2009) reported higher incidence of depressive symptoms in adolescent mothers than in older mothers. Furthermore, Dinwiddie et al. (2018) found that teenage or adolescent mothers are more likely to develop depression during pregnancy and postpartum compared to older mothers (Dinwiddie, Schillerstrom & Schillerstrom, 2018; A-C Bernard-Bonnin, Canadian Paediatric Society, 2004). Reasons for this observation included 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 these factors have been found to be associated with depressive symptoms among adolescent mothers.

The current study revealed that obstetric factors such as unplanned pregnancy and not getting the sex that the mother wished to have before and during pregnancy were associated with postpartum depression. In consistence with this study, results from the study by Saleh et al. (2012), using 2375 women, showed a significant relationship between unplanned pregnancy and depression at 6 weeks of postpartum. Similarly, Beck (2002), using results from six studies, also found an influence of unplanned or unwanted pregnancy and the risk of developing postpartum depression.

This study was consistent with the study by Grote et al. (2010), which found no significant association between PPD and congenital malformations. Complications during delivery did not have any influence on PPD in this study. This is also consistent to the results from a previous study by Valiton et al. (2019), which found no statistical relationship between obstetric complications and postpartum depression. Again, the findings agree with a study by Josefsson et al. (2001), as well as the study by Grote et al. (2010), who reported a similar non-significant association

between delivery complications and depression at 6 months postpartum.

The current study found no association between CS and PPD. Valiton et al. (2019) also found no significant association between elective or emergency caesarean section and subsequent postpartum depression. Again, the study by Grote et al. (2010) also reported a non-significant trend between postpartum depression and caesarean section.

Support from partners and financial constraints are known to trigger stress and depression. The importance of improved income status in the prevention of PPD is well examined (Wenner et al., 2015). Again, financial constraints were found as an important risk factor for postpartum depression (Wenner et al., 2015). Husbands or partners financial support is very necessary in this regard. This study again found financial difficulties during and after delivery and support from partner to have a significant relationship with postpartum depression with p values of 0.033 and 0.041 respectively.

#### Conclusions

On the whole the study has shown that partner support and maternal factors such as age and unplanned pregnancies are the main determinants of postpartum depression among postpartum mothers seeking care at the Tamale Teaching Hospital. The study also revealed that women in their puerperium had some general knowledge on postpartum depression but did not know whether it can be treated or not. Postpartum depression can negatively affect the health of the baby and the mother and have devastating consequences on the life of the mother and baby and for that matter a concerted effort is required to address it.

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