

## Factors Influencing the Effectiveness of Midwife Led Debriefing on Prevention of Postpartum Depression in Western, Kenya

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### ABSTRACT

Childbirth is a stressful event in women's lives and could influence emotions which may lead to mental ill health like depression in the postnatal period if not resolved. Depression is a common mental disorder with serious consequences especially during the postpartum period. The prevalence of postpartum depression varies globally, and can be as low as 0.5% or as high as 60.8% in the first year after childbirth. Due to its detrimental impacts, postpartum depression is a serious public health problem. Debriefing is a type of interpersonal therapy, utilized to treat and prevent serious depressive disorders in both pregnant women and the general adult population. Although debriefing has been shown to be useful in both preventing and treating postpartum depression, its effectiveness has not been fully evaluated. The purpose of the study was to assess factors influencing the effectiveness of midwife-led debriefing on prevention of Postpartum Depression in Western region, of Kenya. The study used a quasi-experimental design with pre and post-test assessments. Systematic random sampling was used to identify and allocate participants. The target population was women of childbearing age and study participants were women who gave birth during the study period, of which a sample of 212 participated. Data were collected using standard questionnaire including Edinburg postpartum depression scale (EPDS) score and an interview schedule. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 26. Chi-square was used to test association between variables. Logistic regression model was used to assess the influence of time-based outcome, based on social cultural and demographic characteristics of women on prevention of postpartum depression. Study results indicated that parity, age, living together with spouse and social support ( $p=0.004$ ;  $p=0.003$ ;  $p=0.002$ ) were significant factors. Additionally, it showed that social support significantly reduced the symptoms of postpartum depression. In conclusion, at the 5% significance level, the key factor was social support ( $p=0.001$ )  $<0.05$  which showed that participants postpartum depression symptoms decreased greatly. Midwife led debriefing is recommended as a routine care during perinatal period. Further studies to be done to explore how social support influences midwife led debriefing on prevention of Postpartum depression.

**Key words:** Effectiveness, Midwife-Led Debriefing, Postpartum Depression, Western, Kenya

### I. INTRODUCTION

Transition into motherhood is generally a joyful life event for women and the family as a whole. However, it is marked by complex and mixed feelings both positive and negative which can affect the woman's psychological response to childbirth (Shorey et al., 2021). Based on studies, mothers are occasionally overwhelmed with stressful experience during antenatal period, labour, delivery and breastfeeding, this being the whole process of change of pregnancy and childbirth (Budiman et al., 2019). This may result in mental ill-health which includes depression.

Postpartum depression is a mood disorder which can affect women after childbirth and they experience feelings of extreme sadness, anxiety, and exhaustion that may make it difficult for them to perform or complete daily care activities for themselves or for others (Gelaye et al., 2016). Untreated Postpartum depression may lead to long

term illness of depression, hence interfering with the relationship between the mother and child, to an extent of suicide as well as infanticide in rare cases (Nguyen et al., 2022).

Postpartum depression can manifest with signs of lack of sleep, fear for being hurt, thoughts of inability to care for and feed the baby, self-doubt, lack of confidence and crying in severe cases. One can have feelings of being hopeless and wanting to end her life and can also lead to child suicide (Nguyen et al., 2022). Feelings of loss of control and emotional distress not only affect the mother, but have known adverse effects to the infant as well (Netsi, et al., 2018). Symptoms of Postpartum depression start after birth of the baby and can persist for one year or more. Therefore, the early postnatal period is a crucial time to improve the health and survival of both the mother and the new born, though it is the postnatal time that receives least attention (Netsi, et al., 2018).

The childbirth experiences have also been proposed to have a strong effect on both the health of the mother and the child (Anokye et al., 2018). For years, studies have been done to ascertain the relationship between obstetric factors like method of delivery and incidence of PPD. However, postpartum depression like other depression cases may not have definite cause, but could be a combination of different factors like physical, biological and hormonal factors (De Bruijn et al., 2020). The factors in regard to operative deliveries like Cesarean section and other operative procedures included long stay in the health facilities and were more likely to develop postpartum depression. In a randomized control trial, results indicated that mothers who had traumatic labour and went through cesarean section, were more likely to be depressed as compared to those who had spontaneous vaginal delivery (SVD) (Abdollahpour et al., 2020). According to Abdollahpour et al. (2020) participants who went through unscheduled cesarean section were more likely to have postpartum depression and were also association with having difficulties with breastfeeding and care of the baby.

According to Larsson et al. (2017), the sex of the baby, whether boy or girl, did not affect the feelings of many women in the western countries like UK. In Africa, having a baby girl twice or more without a baby boy was more likely to affect the depression status of women because of family and community expectations. Women felt secure in their marriages when they deliver at least a male child (Abadiga, 2019).

Childbirth outcome is desired by a woman however, and it also comes with uncertainty and anxiety (Larsson et al., 2017). Each woman has their own perceptions and different responses to pregnancy, labour and delivery. This response depends on individual characteristics (Gelaye et al., 2016). Major factors that contribute to postpartum depression included age, educational status, occupation, and social support. According to Galaye et al. (2016), the risk factors to postpartum depression were inefficient or lack of social support and this was high in Low- and middle-income countries. There was increase severity in the signs and symptoms of perinatal depression for those women who had their partners away and did not have other family member support (Netsi, et al., 2018). Postpartum depression and its associated factors in Africa indicated socio demographic and cultural factors greatly increased the prevalence of postpartum depression (Dadi, 2020). It also highlighted more than 60% of women did not have tertiary education, therefore were not employed neither were they involved in any self-employment opportunities (Dadi, 2020)

A study done in Ethiopia on socio cultural practices during perinatal period and its effects on postpartum depression was highly associated with hunger and lack of resources like money to sustain their need to survive. Other factors included maternal age, parenteral education and previous mental diseases (Abadiga, 2019) The male dominance especially in relation to family decision making had great impact on the women's confidence and stability. The women totally depended on their spouses to make decisions on clinic attendance, buying medicine, selling crops and even type of food to be eaten by family. Women in Rural Ethiopia received less social support or even help in family and house work (Abadiga, 2019). According to Kariuki et al. (2022), low income for women in the African countries affects negatively their emotional state. This was because mothers may not concentrate on the current state but remain in deep thoughts of what is ahead of them in terms of their inability to pay hospital fees or even afford a meal for herself, baby and entire family (Kariuki et al., 2022).

The health facility is expected to be conducive and friendly to the woman who is going through labour and delivery. Delay in service delivery may lead to anxiety and uncertainty to mothers during labour and delivery. This is because they totally rely on the health care worker for the good outcome and expectation of having a life and health baby (Tsivos et al., 2015). The health facility environment that was perceived to be conducive and provided for space for family members like the spouse for support during labour and delivery showed positive outcomes and less depression symptoms (O'Connor et al., 2019).

It was also noted, where Midwives were allocated to take care of specific clients, there was more satisfaction and therefore less perceived stress by women. This was because the midwife concentrated on the individual client and had an organized plan for the care (Asadzadeh et al., 2020). Psychological trauma is subjective and mainly defined by what an individual explains in relation to her feelings. This may also be as a result of personal characteristics and

interactions (Gelaye et al., 2016). There was scanty information from studies in Africa on the magnitude of Postpartum depression and its related factors on its prevention. Systematic review of fifteen articles showed that Low Middle-Income Countries (LMICs) had high prevalence of PPD being 25%, of which South Africa (6.9-43%), Uganda (43%), and Kenya (13-18.7%) (Atuhaire et al., 2020). Therefore, this study assessed the factors affecting the effectiveness of midwife led debriefing on prevention of postpartum depression in Western region Kenya.

## II. METHODOLOGY

The study adopted quasi experimental design, with pre and post intervention measurement and this gave opportunity to compare the intervention and control group. The study design was chosen because the study was done in a natural setting (real world setting) allowing the researcher to work with existing population (postpartum mothers). The design made it possible to measure the influence of factors on midwife led debriefing on prevention of postpartum depression (PPD). The study was carried out in Kakamega and Bungoma counties (Kakamega and Bungoma County Referral Hospitals) in Western region, Kenya.

The sample size calculation was guided by Cohen, (1992), taking note of the effect size. Participants were systematically selected giving them equal opportunity to participate using a postnatal register as the sampling frame. The subjects were selected based on the inclusion criteria that included: - Child bearing women of ages 18 years and above giving birth at term, women who delivered at the health facility and were within 72 hours post-delivery, the mother should have had her 1<sup>st</sup> or 2<sup>nd</sup> delivery and resident in the study area during the study period after childbirth up to one year. The study excluded Women who were diagnosed with mental illness or on treatment and women who did not consent to participate in the study. A total of 212 participants were selected and 165 allocated to intervention while 47 to control group.

Ethical considerations were followed and approval from Institution Ethical Research Committee (IERC) MMUST, Permit from NACOSTI and informed consent from participants. Both qualitative and quantitative data was collected using a structured and open-ended questionnaire. This enhanced the credibility, generalization and contextualization of the research findings. Edinburg Postpartum Depression Scale (EPDS) tool was used to assess the depression levels before and after intervention where  $<13$  (No symptoms of depression) and  $\geq 13$  (with symptoms of depression). Baseline assessment was done using EPDS tool and other relevant data was collected. This was followed by midwife led debriefing for the intervention group and standard care to the control group. Follow up of participants whose EPDS scores was  $\geq 13$  (Intervention group = 49; Control group = 16) being a total of 65 participants.

Data analysis was done using SPSS Version 26. Pearson's correlation coefficient was used to determine strength of association between the individual characteristics, and the outcome with or without postpartum depression. Logistic regression model was used to assess the influence between time-based outcome variables, social cultural and demographic characteristics of the participants on prevention of postpartum depression.

## III. RESULTS AND DISCUSSIONS

### 3.1 Demographic Information

The information on the age, marital status, housing arrangement, degree of education, employment, religion, parity, and mode of delivery of the respondent was analyzed in this section. The primary goal of this was to identify any patterns in the respondent profile that could be connected to the study's variables.

From the demographic characteristics, it was evident that majority (62.8%) of the women were between the ages of 18 to 34. This was possibly seen because the study targeted women who were having their first and second baby, indicating that majority of them were young mothers and 70.8% were married. The level of education ranged between primary school (35.8%) and no formal education at 34.1%. A few of them had attained secondary and tertiary education i.e., 16.1% and 14% respectively. This showed that majority (70%) of participants had low or no formal education. This was also evident in the women's occupations where the majority were housewives (49.5%); with a smaller percentage doing formal employment (9.4%) and self-employment (18%). This study results were consistent with a study conducted in Ethiopia, where the majority of women were housewives and had no other source of income (Abadiga, 2019). Protestants made up 68.4% of the participants, followed by Catholics (30.1%) and less than 2% of Muslims. This may have occurred as a result of the study's area being dominated by Christians. The majority of the participants in the study were married, but the results showed that 59.8% of them did not live together with their spouse. When it came to the extent of postpartum depression in Africa, women were observed to be left at home while



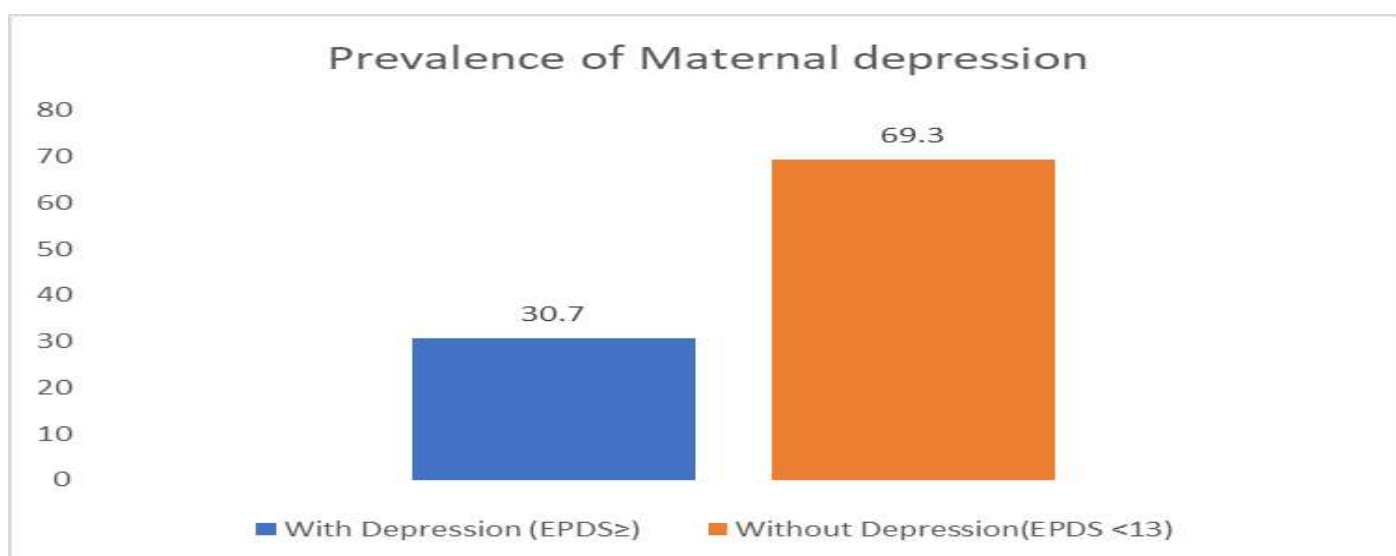
males went to urban settings to work, (Atuhaire et al., 2020). The researcher deduced from these findings that, as the primary givers of financial support for the family, the wives of participants were probably in an urban environment.

**Table 1**  
*Demographic Characteristics*

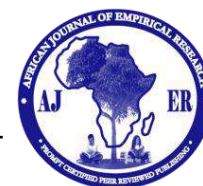
		Intervention n (%)	Control (n) (%)	Without Depression (13) n(%)	With Depression (≥13) n (%)
Age	18-34	104 (49.1)	29(13.7)	100 (47.2)	43(20.3)
	35-49	61(28.7)	18(8.5)	50(23.6)	19(8.9)
Current Marital Status of the Respondent	Single	36(17)	10(4.7)	32(15.1)	14(6.6)
	Married	117(55.2)	33(15.6)	104(49.2)	45(21.2)
	Divorced/separated	5(2.3)	2(.9)	5(2.4)	2(0.9)
	Widowed	3(.01)	1(.47)	2(0.9)	2(0.9)
	Cohabiting	4(1.8)	1(.47)	4(1.9)	2(0.9)
Currently living with partner/spouse/husband	Yes	78(36.8)	22(10.4)	69(32.5)	31(14.6)
	No	87(42)	25(17.8)	78(36.7)	34(16)
Highest Level of Education	None	57(27)	15(7.1)	50(23.5)	22(10)
	Primary	59(27.8)	17(8)	52(24.5)	23(10.8)
	Secondary	26(12.3)	8(3.8)	24(11)	11(5.2)
	College/University	23(10.8)	7(3.3)	21(9.9)	9(4.2)
Current Occupation	House Wife	82(38.7)	23(10.8)	73(34)	32(15.1)
	Student	16(7.5)	5(2.4)	15(7.1)	6(2.8)
	Self employed	30(14.2)	8(3.8)	26(7.1)	12(5.6)
	Formal employment	16(7.5)	4(1.9)	14(6.6)	6(2.8)
	Casual labour	19(8.9)	6(2.8)	17(8)	8(3.7)
	Unemployed	2(.9)	1(.47)	2(0.9)	1(0.47)
Religion of the Respondent	Catholic	50(23.5)	14(6.6)	44(20.7)	20(9.4)
	Protestant	113(53.3)	32(15.1)	101(47.6)	44(20.7)
	Muslim	2(.9)	1(.47)	2(0.9)	1(0.47)

**3.2 Prevalence of postpartum depression**

Edinburg postpartum depression scale (EPDS) tool was used to measure the scores for the baseline assessment results and this determined the state of postpartum depression. The study results showed the prevalence of depression in women after childbirth was 30.7% as shown in Figure 1.



**Figure 1**  
*Baseline Assessment on Maternal Depression*



The participants, who scored both EPDS < 13 and ≥ 13, were identified and coded into groups for follow -up and this enabled the researcher to examine the change during follow -up. From the study findings during follow up the group that had EPDS scores < 13 didn't have a negative change, in any case majority had their scores reducing even more below 13 points. This indicated improvement and maintenance of no depression (being <13 EPDS scores). On the other group, participants who had EPDS score ≥ 13 were 65 (30.7%) with depression and this group were followed up. The total of 65 participants formed the basis of follow up and analysis to determine the influence of various factors on effectiveness of midwife led debriefing on prevention of postpartum depression, since they had symptoms of postpartum depression based on the EPDS of ≥13.

### 3.3 Influence of Obstetric Factors on Prevention of Postpartum Depression

The following study results focused on influence of obstetric factors on prevention of postpartum depression when participants were exposed to midwife led debriefing and in comparison, with those in the control group. Participants who were coded as depressed after baseline assessment using Edinburg Postpartum Depression Scale (EPDS) of ≥13 points were coded differently and followed up monthly with individual midwife led debriefing and assessments done after three months to monitor the progress. Those participants in the intervention group who scored EPDS scores <13, were followed up quarterly to assess if there would be any deviation to depression. In the control group, participants who were also classified as depressed (≥13) were followed up after three months following the standard care provided to them. All participants in the study were followed up to assess any positive or negative change for example, moving from non- depression <13 (without symptoms of depression) or to ≥13 (with symptoms of depression).

The influence of obstetric factors on prevention of postpartum depression was analyzed through the use of Pearson's chi-squared test analysis. The difference in changes due to obstetric factors was summarized in in Table 2.

**Table 2**  
*Effects of Mode of Delivery on Postpartum Depression*

		Before Intervention n=212 (165+47)		Follow up after 3 months n=49 (49+16)		Difference
		Depressed (%)	Not Depressed (%)	Depressed (%)	Improved during follow up (%)	p-value
<b>Intervention</b>	Caesarean	21(12.7)	24(14.6)	14(28.6)	7(14.3)	0.014
	Vaginal	28(17.0)	92(55.7)	13(22.4)	15(30.6)	
		<b>Baseline assessment (n=47)</b>		<b>Follow up after 3 months (n=16)</b>		
<b>Control</b>	Caesarean	6(12.8)	7(14.9)	5 (31.3)	1(6.3)	0.072
	Vaginal	10(21.3)	24(51.0)	9 (56.3)	1(6.3)	

The study results indicated some improved difference in the percentage of participants who were depressed before and after intervention like cesarean section (12.7%); Vaginal delivery (17.0%) being 29.7% improvement of total participants on intervention group. This was the percentage out of the total number of participants on the intervention group who scored ≥13 (symptoms of depression). During follow up at three and six months, there was no change. However, later after nine months and during follow-up, there was improvement of 14.3% among participants who underwent cesarean section and Vaginal delivery by 30.6%. From the analysis women who had cesarean section (CS) as their mode of delivery, though with low percentage were more likely to have midwife led debriefing intervention beneficial and they improved as compared to those who had Vaginal delivery as shown from the *p*- value significance of *p*= 0.014 (<0.05).

The cesarean section (CS) participants who were depressed were initially twenty-one (21) before intervention decreased to fourteen (14) in numbers for example improvement from depression to non-depression was by 33%. Women who underwent CS felt sad and sometimes needed more support because of their mode of delivery and its associated factors like feeling of inadequacy and having a scar that would take some time to heal. The results agree with a study done by Asadzadeh et al., (2020), which indicated that mothers who had cesarean section as their mode of delivery were more likely to benefit more from debriefing as compared to those who delivered via spontaneous Vaginal delivery (SVD) Participants who had spontaneous vertex delivery (SVD) as their mode of delivery had also more than 50% improvement among those who had EPDS ≥13.



From the control group, some participants had Edinburg Postpartum Depression Scale (EPDS) scores of  $\geq 13$  which still indicated depression and others  $< 13$  points indicating no depression in both CS and spontaneous vaginal delivery. During follow up, three months later the change was very minimal with the  $p$ -value = 0.07 ( $> 0.05$ ) indicating no significance. This outcome could be as a result of no intervention of midwife led debriefing and participants were on standard care. The slight change in Caesarean section and Vaginal delivery was not significant since there was only improvement of one participant (6.3%) moving from depression to non-depression according the EPDS scores. According to Larsson et al. (2017), on preventing post-traumatic stress following childbirth, it was reported that mothers who had EPDS of  $< 13$  did not need to be debriefed or be given any psychological intervention unless the client requested for the same.

### 3.4 Influence of Parity on Prevention of Postpartum Depression

The mean differences on the effect of parity on prevention of postpartum depression were determined through the use of Pearson’s chi-squared test analysis. The summary of the changes before and after the intervention is a shown in Table 3.

**Table 3**  
*Influence of Parity on Postpartum Depression*

		Before Intervention n=212 (165+47)		Follow up after 3 months n=49 (49+16)		Difference
		Depressed (%)	Not Depressed (%)	Depressed (%)	Improved during follow up (%)	p-value
<b>Intervention</b>	primigravida	<b>30(18.2)</b>	40(24.2)	<b>20(40.8)</b>	10(20.5)	<b>0.004</b>
	multiparous	<b>19(11.5)</b>	76(46.1)	<b>13(26.5)</b>	6(12.2)	
		<b>Baseline assessment (n=47)</b>		<b>Follow up after 3 months (n=16)</b>		
<b>Control</b>	primigravida	<b>7(14.9)</b>	13(27.7)	<b>5 (31.2)</b>	2(12.5)	0.0163
	multiparous	<b>9(19.1)</b>	18(38.3)	<b>8 (50.0)</b>	1(6.3)	

The study showed that first-time mothers were more likely to be influenced by midwife-led debriefing as compared to Multiparous mothers. The results indicated change in those who had depression before and improvement after intervention. The analysis change to non-depression was by 20.5% (Primigravida) and 12.2% (Multiparous). The findings indicated a significant difference in the primigravida depression status, which may have been enhanced by the intervention of midwife-led debriefing ( $p$ -value of 0.004 ( $< 0.05$ )).

This result agrees with the study done by Martín-Gómez et al. (2019) where the young mothers especially first-time mothers (Primigravidas) benefited from midwife led psychological care to control and reduce postpartum depression. Abdollahpour et al. (2020) conducted a critical analysis of twelve (12) studies, and eight of them revealed that midwife-led debriefing reduced postpartum depression on primigravida mothers by 76.4%. This indicates that the first-time mothers were more likely to be receptive and therefore they received positive effects; hence improvement and reduction of depressive symptoms. The control group of both Primigravidas and multiparous had some slight improvement with a  $p$ -value of 0.0163 ( $< 0.05$ ). This shows significance though with low magnitude and change.

The mean differences on the influence of sex of the baby on postpartum depression were determined through the use of Pearson’s chi-squared test analysis. The summary of the changes before and after the intervention is a shown in Table 4.

**Table 4**  
*Influence of Sex of the Baby on Postpartum Depression*

		Before Intervention n=212 (165+47)		Follow up after 3 months n=49		Difference
		Depressed ( $\geq 13$ ) n(%)	Not Depressed ( $< 13$ ) n(%)	Depressed ( $\geq 13$ ) n(%)	Improved during follow up ( $< 13$ ) (%)	p-value
<b>Treatment</b>	Boy	<b>17(10.3)</b>	49(29.7)	<b>10(20.4)</b>	7(14.3)	0.057
	Girl	<b>32(19.4)</b>	67(40.6)	<b>23(46.9)</b>	9(18.4)	
		<b>Baseline assessment (n=47)</b>		<b>Follow up after 3 months (n=16)</b>		
<b>Control</b>	Boy	<b>7(14.9)</b>	15(31.9)	<b>6 (37.5)</b>	1(6.2)	0.0251
	Girl	<b>9(19.1)</b>	16(34.1)	<b>9 (56.3)</b>	0(0.0)	

The study did not show any significance based on whether the participant mother had delivered a baby girl or a baby boy. However, based on the spoken conversation, the mothers who had given birth to a girl for their second



were concerned about how their husbands and other family members might respond. This made them anxious and worried after childbirth. After midwife led debriefing intervention, some participants felt relieved that they were not the only one that had the challenge of their relatives in regard to the sex of the baby. During the discussion session, the participants who were anticipating to bear a male child as their second born were disappointed were sad of what awaited them at home in terms of mistreatment and lack of support. Therefore, the midwife led debriefing gave them an opportunity to ventilate their fears and they felt reassured and relaxed. The results agree with Bastors et al. (2015), who found no significance in regard to sex of the baby and influence to postpartum depression.

A summary of the influence of obstetric factors on prevention of postpartum depression was done through the use of odds ratio analysis so as to determine which variable was more significant (Table 5).

**Table 5**  
*Obstetric Factors Influence on Prevention of Postpartum Depression*

			Control	Intervention	Odds (OR)	P-Value
Mode of delivery	SVD C/S	<13	2	22	0.1753	<b>0.001</b>
		≥13	14	27		
		Totals	16	49		
Parity	Para 1 Para 2	<13	3	16	0.4760	0.023
		≥13	13	33		
		Totals	16	49		
Sex of the baby	Male Female	<13	1	16	0.1375	0.037
		≥13	15	33		
		Totals	16	49		

With reference to mode of delivery, OR=0.1753 (<1) which means that the control group was less likely to experience no depression. With the introduction of the intervention (midwife led debriefing), the intervention group were more likely to experience no depression after debriefing was done. This indicates that the implementation of midwife-led debriefing significantly improved the depressed individuals' condition. The mode of delivery therefore, influences midwife-led debriefing, which in turn reduces PPD symptoms. With a 95% CI, mode of delivery was statistically significant as depicted by p-value  $0.001 < 0.05$ , thus mode of delivery as a factor plays a significant role in midwife led debriefing on prevention postpartum depression.

With regards to parity, results showed that the OR = 0.4760 < 1, means that the control group was less likely to experience no depression. With the introduction of the intervention (debriefing), the intervention group was more likely to experience no depression after midwife led debriefing was done. The results show there was significance with reference to parity. Parity was shown to be statistically significant ( $p = 0.023 < 0.05$ ), indicating that it was important to midwife-led debriefing on prevention of postpartum depression.

The Study results in general indicated that obstetric factors played a role when midwife led debriefing was introduced as an intervention to prevent postpartum depression (PPD), as it indicated there was significance. With a 95% CI mode of delivery (MOD) and parity was significant with a p-value 0.001; 0.023 (<0.05). Participants who delivered through cesarean section (C/S) improved greatly after midwife led debriefing and those who were first time mothers. These results agree with (Shorey et al., 2021) with emphasis on Cesarean section to be termed as traumatic stress during delivery.

According to these findings, women who had cesarean sections and first-time mothers, benefited more from the midwife-led debriefing intervention. Participants who went through C/S and the first-time mothers seemed to embrace the midwife led debriefing intervention as they were more uncertain and therefore, more receptive to learn more. This finding confirms the results of previous Australian studies Asadzadeh et al., (2020), where participants who had delivered through cesarean section were assumed to have had a traumatic birth and showed significance in terms of reduction of symptoms of postpartum depression.

### 3.5 Social Demographic Factors

The influence of age on prevention of postpartum depression was analyzed through the use of Pearson's chi-squared test analysis. The difference in changes due to age was summarized in Table 6.

**Table 6**  
*Influence of Age on Prevention of Postpartum Depression*

		Before Intervention n=212 (165+47)		Follow up after 3 months n=49		Difference p-value
		Depressed (%)	Not Depressed (%)	Depressed (%)	Improved during follow up (%)	
<b>Intervention</b>	18-34	<b>31(18.8)</b>	43(26.1)	<b>17(34.7)</b>	14(28.6)	<b>0.006</b>
	35-49	<b>18(10.9)</b>	73(44.2)	<b>10(20.4)</b>	8(16.3)	
		<b>29.7%</b>			<b>44.9%</b>	
		<b>Baseline assessment (n=47)</b>		<b>Follow up after 3 months (n=16)</b>		
<b>Control</b>	18-34	<b>10(21.3)</b>	17(36.2)	<b>6 (37.5)</b>	4(25.0)	0.017
	35-49	<b>6(12.7)</b>	14(29.8)	<b>5 (31.3)</b>	1(6.2)	

From the study results participants who were younger ranging between 18 to 34 years, improved greatly after midwife led debriefing intervention. This was evident from the results before and after intervention respectively. Out of the 29.7% who had depression according to EPDS ( $\geq 13$ ), 44.9% of the depressed participants, improved to no depression three months after midwife led debriefing. There was a 50% change from depression to a decrease in symptoms of depression, based on the EPDS scores. The analysis showed a significance of  $p\text{-value} = 0.006 (< 0.05)$ . This change informs that the young participants (18-34) years were more likely to be influenced by Midwife led debriefing positively. The control group on the other hand didn't show much difference, though with some slight change. This result agrees with Fenwick et al. (2015) where young mothers had a greater change towards no symptoms of depression after midwife psycho education intervention was done. Although, the result contradicts with Sheen and Slade (2015), who found no difference related to age of the mothers after delivery.

Analysis on the influence of educational level on prevention of postpartum depression was done using of Pearson's chi-squared test analysis. The difference in changes due to educational level was summarized in Table 7.

**Table 7**  
*The influence of Educational Level on Prevention of Postpartum Depression*

		Before Intervention n=212 (165+47)		Follow up after 3 months n=49		Difference p-value
		Depressed ( $\geq 13$ ) n (%)	Not Depressed ( $< 13$ )n (%)	Depressed ( $\geq 13$ )n (%)	Improved during follow up (%)	
<b>Intervention</b>	No formal education	6(3.6)	23(13.9)	4(8.2)	2(4.1)	0.002
	Primary	11(6.7)	24(14.5)	8(16.3)	3(6.1)	
	Secondary	22(13.3)	44(26.7)	15(30.6)	7(14.3)	
	College/University	10(6.1)	25(15.2)	7(14.3)	3(6.1)	
		<b>Baseline assessment (n=47)</b>		<b>Follow up after 3 months (n=16)</b>		
<b>Control</b>	No formal education	2(4.3)	3(6.4)	2(12.5)	0(0.0)	0.052
	Primary	4(8.5)	9(19.1)	3(18.7)	1(6.3)	
	Secondary	5(10.6)	12(25.5)	3(18.7)	2(12.5)	
	College/University	5(10.6)	7(14.9)	2(12.5)	3(18.8)	

The results indicated that those without formal education were more likely to be affected by midwife-led debriefings on postpartum depression prevention. The p-value was  $p=0.002 (< 0.05)$  which indicated significance. This might have happened as a result of their inadequate knowledge about labor and delivery. As a result, they were more open to the midwife-led debriefing and found it to be more helpful. Since there was little variation in the control group, the p-value = 0.052 ( $> 0.05$ ) indicates that the result was not significant. This result disagrees to a study done by (Chaharrahifard et al., 2021) where results indicated no difference in regard to level of education on prevention of PPD.

The influence of occupation on reducing the possibility of postpartum depression was examined using Pearson's chi-squared analysis. Table 8 provided an overview of the variations in changes brought on by occupation.





**Table 8**

*The Effect of Occupation on Postpartum Debriefing*

		Before Intervention n=212 (165+47)		Follow up after 3 months n=49		Difference
		Depressed (%)	Not Depressed (%)	Depressed (%)	Improved during follow up (%)	p-value
<b>Intervention</b>	House Wife	6(3.6)	19(11.5)	4(8.2)	2(4.1)	0.043
	Student	7(4.2)	13(7.9)	6(12.2)	1(2.0)	
	Self employed	8(4.8)	14(8.5)	5(10.2)	2(4.1)	
	Formal employment	2(1.2)	18(10.9)	2(4.1)	1(2.0)	
	Casual labour	11(6.7)	21(12.7)	8(16.3)	3(6.1)	
	Unemployed	15(9.1)	31(18.8)	10(20.4)	5(10.2)	
			<b>Baseline assessment (n=47)</b>		<b>Follow up after 3 months (n=16)</b>	
<b>Control</b>	House Wife	3(6.3)	5(10.6)	2(12.5)	1(6.3)	0.054
	Student	2(4.4)	3(6.3)	1(6.3)	1(6.3)	
	Self employed	2(4.4)	4(8.5)	1(6.3)	1(6.3)	
	Formal employment	2(4.4)	4(8.5)	2(12.5)	1(6.3)	
	Casual labour	4(8.5)	8(17.0)	2(12.5)	1(6.3)	
	Unemployed	3(6.3)	7(14.8)	2(12.5)	1(6.3)	
			<b>Baseline assessment (n=47)</b>		<b>Follow up after 3 months (n=16)</b>	

The results show no significance based on whether the participants were employed or not, in regard to their status being influenced by Midwife led debriefing on prevention of PPD. According to Abadiga, (2019), mothers who didn't have any source of income were more likely to be depressed as compared to those who were either employed or self-employed. Studies done didn't have any significance on whether the mothers were employed or not (Martín-Gómez et al., 2020).

The influence on participants living together with spouse on prevention of postpartum depression was done through the use of Pearson's chi-squared test analysis. The difference in changes due to participants living together with spouse was summarized in in Table 9.

**Table 9**

*The influence of Participants Living Together With Spouse on Prevention of Postpartum Depression*

		Before Intervention n=212 (165+47)		Follow up after 3 months n=49		Difference
		Depressed (%)	Not Depressed (%)	Depressed (%)	Improved during follow up (%)	p-value
<b>Intervention</b>	Yes	<b>22(13.3)</b>	46(27.9)	<b>12(24.5)</b>	10(20.4)	0.002
	No	<b>27(16.4)</b>	70(42.4)	<b>18(36.7)</b>	9(18.4)	
		<b>Baseline assessment (n=47)</b>		<b>Follow up after 3 months (n=16)</b>		
<b>Control</b>	Yes	<b>7(14.9)</b>	14(29.8)	<b>5 (31.3)</b>	2(12.5)	0.042
	No	<b>9(19.1)</b>	17(36.2)	<b>6 (37.5)</b>	3(18.7)	

The study results showed a significant difference between the baseline assessment i.e. before intervention and after intervention during follow up, while there was no much difference in the control group. It indicated that there was positive relationship and influence of Midwife led debriefing especially for the participants who were living together with their spouses as represented with the significance of *p-value* =0.002 (<0.05). This result agrees with Asadzadeh et al., (2020), where those who had strong spouse and family support improved greatly following



counselling after a traumatic birth. This also was evident during follow up where mothers verbalized the support from their spouses and family members. This was possibly because, they had available members to care for the baby and had readily available food, therefore were not stressed on how and where to get food.

The influence of social support on prevention of postpartum depression was analyzed through the use of Pearson’s chi-squared test analysis. The difference in changes due to social support was summarized in in Table 10.

**Table 10**  
*Influence of Social Support on Prevention of Postpartum Depression*

		Before Intervention n=212 (165+47)		Follow up after 9 months n=49		Difference
		Depressed (%)	Not Depressed (%)	Depressed (%)	Improved during follow up (%)	p-value
<b>Intervention</b>	Yes	23(13.9)	43(26.1)	11(22.4)	12(24.5)	0.001
	No	26(15.8)	73(44.2)	19(38.8)	7(14.3)	
		<b>Baseline assessment (n=47)</b>		<b>Follow up after 9 months (n=16)</b>		
<b>Control</b>	Yes	5(10.6)	15(31.9)	4 (25.0)	1(6.3)	0.038
	No	11(23.4)	16(34.0)	8 (50.0)	3(18.7)	

Participants who had social support were significantly more likely to respond positively to midwife led debriefing intervention hence, reduction in depression symptoms. With the 95% CI,  $p$ -value =0.001 (<0.05) indicated significance. This result agrees with a study done to determine the magnitude and associated factors to postpartum depression which indicated that those mothers who had social support were less likely to experience symptoms of PPD (Abadiga, 2019). There was no marked difference for those who were in the control group therefore, implying that there was no Significance in regard to social support and standard care.

On comparing the sociodemographic factors and postpartum depression, the variables were categorized based on depression status. A summary of the influence of socio-demographic factors on prevention of postpartum depression was done through the use of odds ratio analysis so as to determine which variable was more significant (Table 11).

**Table 11**  
*Socio-demographic Factors Influence on Prevention of PPD*

	EPDS Parameter	Control	Debriefing (Treatment)	Odds (OR)	P-Value
<b>Age</b>	<13	5	22	0.5579	0.003
	≥13	11	27		
	<b>Totals</b>	16	49		
<b>Educational level</b>	<13	6	15	1.360	0.058
	≥13	10	34		
	<b>Totals</b>	16	49		
<b>Occupation</b>	<13	8	13	2.7696	0.372
	≥13	8	36		
	<b>Totals</b>	16	49		
<b>Spouse living together</b>	<13	5	19	0.717702	0.002
	≥13	11	30		
	<b>Totals</b>	16	49		
<b>Marital status</b>	<13	4	18	0.57407	0.004
	≥13	12	31		
	<b>Totals</b>	16	49		
<b>Social support</b>	<13	3	35	2.0305	0.001
	≥13	13	14		
	<b>Totals</b>	16	49		

Based on the socio demographic characteristics,  $OR = 0.5579 < 1$  which means that the control group in terms of participant age was less likely to experience no depression, but with the introduction of the intervention (midwife led debriefing), the intervention group was more likely to experience no depression after debriefing was done. This



shows that there was significance with reference to age of the respondents. With a 95% CI, age is statistically significant as depicted by  $p= 0.003 < 0.05$ , thus age plays a significant role in midwife led debriefing on prevention of postpartum depression.

From the results, the  $OR = 2.0305 > 1$  which means that the control group was more likely to experience no depression, but with the introduction of the midwife led debriefing, the intervention group was less likely to experience no depression after debriefing was done. With a 95% CI, social support is statistically significant as depicted by  $p= 0.002 < 0.05$ , thus social support plays significant role in midwife led debriefing on postpartum depression. This shows that there is significance with reference to social support of the respondents.

The factors that were statistically significant were, age ( $p=0.003 < 0.05$ ), educational level ( $p=0.008 < 0.05$ ), marital status ( $p=0.004 < 0.05$ ), and social support ( $p=0.002 < 0.05$ ). This shows that age, educational level, marital status, and social support affects the uptake of mid wife led debriefing and this can influence the participants psychological status in terms of postpartum depression and therefore leading to reduction of symptoms of postpartum depression hence resulting to a positive outcome.

The study's findings showed participants who had social support that is, their partners and other family members were available for them both during and after childbirth, exhibited less depressed signs and symptoms after midwife led debriefing as demonstrated with the significance ( $P$ -value 0.0001). The study results socio- demographic factors like those who were married and expressed family support benefited more from the midwife led debriefing  $p=0.004 (<0.05)$ , this showed significance. The results agree with Larsson et al., (2017) reported that most women who were married and felt supported improved during follow up following debriefing as compared to those who perceived to have no support.

These findings were consistent with a systematic review conducted by Elizabeth O'Connor et al., (2019) which found that 13 studies (or 26% of the total) demonstrated favorable outcomes and a decrease in depressive symptoms after psychological counseling of postpartum women, particularly those whose spouses were present and available when needed. According to the systematic study, some people (14%) reported unfavorable impacts, such as an increase in depressive symptoms, while others did not experience any differences. However, the systematic review done by (Bastos et al., 2015) disagree with the study results because its findings didn't show any difference between the group that was debriefed (intervention) and the group that received standard care (Control) in regard to marital status and social support.

It was evident that, participants who had good support system throughout intrapartum and postpartum exhibited positive results with reduced symptoms of PPD. The researcher therefore, noted that having mothers supported physically and emotionally plays a key role in improving and maintaining quality health. These results shows that a good percentage of participants, postnatal mothers can benefit from midwife led debriefing to prevent postpartum depression in addition to good support system. It was clear from the degree of lowered EPDS  $<13$ , that the psychological effect of the midwife-led debriefing was exhibited. Following a critical review of twelve (12) articles reviewed by Abdollahpour et al. (2020), eight indicated positive benefits after midwife led debriefing intervention on primiparous. However, four articles didn't show any difference between intervention group and non-intervention group.

### 3.6 Health Facility Factors

The effect of health facility factors on postpartum depression was done through the use of odds ratio analysis so as to determine which variable is more significant (Table 12).

**Table 12**  
*Summary of Health Facility Factors on Prevention of Postpartum Depression*

	EPDS Parameter	Control n(%)	Debriefing (Treatment) n(%)	Odds (OR)	P-Value
Staff attitude and support	<13	2(3.1)	11(16.9)	0.36364	0.001
	≥13	14(21.5)	28(43.1)		
	Totals	16(24.6)	49(75.4)		
Provision made for men	<13	3(4.6)	5(7.7)	2.03077	0.023
	≥13	13(20)	44(67.7)		
	Totals	16(24.6)	49(75.4)		

From the results, the  $OR = 0.36364 < 1$  which means that the control group was less likely to experience no depression, but with the introduction of the treatment (debriefing), the intervention group was more likely to experience no depression after debriefing was done. With a 95% CI, staff attitude and support were statistically significant as depicted by  $p = 0.001 < 0.05$ , thus staff attitude and support play a significant role in midwife led debriefing on prevention of postpartum depression. This showed that there was significance with reference to staff attitude and support on postpartum depression.

From the results, the  $OR = 2.03077 > 1$  which means that the control group was more likely to experience no depression, but with the introduction of the intervention (debriefing), the treatment group was less likely to experience no depression after midwife led debriefing was done. With a 95% CI, provision made was statistically significant as depicted by  $p = 0.023 < 0.05$ , thus provision made plays a significant role in midwife led debriefing on postpartum depression. The results indicated participants who viewed midwives as good and treated them well had beneficial outcomes by reduction in depression symptoms ( $p$ - value  $0.001 < 0.05$ ). Sheen and Slade (2015), agrees that midwife led debriefing is mainly effective for those women who perceived midwives were good and psychologically supported them. This indicates that the midwife attitude in care of clients and mothers during labour and delivery is very important and contributes towards quality health.

## IV. CONCLUSIONS & RECOMMENDATIONS

### 4.1 Conclusion

The study found factors like socio-demographic factors (age, education and social support), obstetric factors (Mode of delivery, parity and infant sex) and midwife attitude during care, had influence on prevention of postpartum depression.

### 4.2 Recommendation

The study recommends that National and County governments develop policies aimed at providing social support for mothers throughout the perinatal period. This can be done through formation of Support groups during the perinatal period. Further research on the effects of social support on prevention postpartum depression is also recommended.

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