Prevalence and Correlates of Maternal Morbidity in Enugu, South-East Nigeria

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Abstract

The objective of the study was to determine the prevalence and correlates of maternal morbidity following childbirth in Enugu, South East Nigeria. A questionnaire-based cross-sectional study of women with recent deliveries in Enugu was done. Respondent were 8 times more likely to report a symptom than not (OR 8.14 95% C.I. 5.48, 12.68). Puerperal sepsis, perineal pain, dyspareunia, postpartum haemorrhage, gestational (postpartum) hypertension and utero-vaginal prolapse were the commonest obstetric/gynaecological morbidities. Multivariate analysis showed that the main predictors of specific morbidities were high parity category, abdominal delivery and delivery by unskilled birth attendant. It is concluded that the prevalence of morbidity following childbirth in the population sampled was high due mainly to obstetric factors and that reportage of morbidity had little to do with the demographic characteristics of respondents. A population based study is recommended to determine the actual prevalence and predictors of morbidity following childbirth in the population (*Afr. J. Reprod. Health* 2010; 14[3]: 121-129).

Résumé

Prévalence et corrélats de la morbidité maternelle à Enugu, au sud-est du Nigéria. Cette étude avait pour objectif de déterminer la prévalence et les corrélats de la morbidité maternelle suite à l'accouchement, à Enugu au sud est du Nigéria. Nous avons mené une étude tranversale à base des questionnaires auprès des femmes qui ont accouché récemment à Enugu. Les répondantes avaient huit fois de plus la chance de signaler un symptôme que non (OR 8,14 95% C, 1, 5,48, 12,68). La septicémie puerpérale, la douleur périnéale, la dyspareunie, l'hémorragie de la délivrance, l'hypertension (de la délivrance) et le prolapsus utéro-vaginal, étaient parmi les morbidités particulières obstétriques / gynécologiques les plus communes. L'analyse multifactorielle a montré que les indices principaux des morbidités particulières étaient une catégorie élevée de la parité, l'accouchement abdominal et l'accouchement par un accoucheur non qualifié. Comme conclusion, nous avons affirmé que la prévalence de la morbidité suite à l'accouchement auprès de la population échantillonnée était élevée à cause des facteurs obstétriques et que le fait de signaler la morbidité a très peu à voir avec les traits démographiques des répondantes. Nous préconisons une étude basée sur la population pours déterminer la vraie prévalence et les vrais indices de la mortalité suite à l'accouchement dans la population (*Afr. J. Reprod. Health* 2010; 14[3]: 121-129).

Key words: Prevalence, correlates, maternal morbidity, childbirth, Nigeria.

Introduction

Maternal morbidity following childbirth refers to physical or psychological ill-health that has arisen as a result of incidental to pregnancy, delivery or the puerperium and has been noticed or identified after childbirth. Most studies on maternal morbidity following childbirth in Nigeria have largely empha-sized specific and severe morbidities such as vesico-vaginal fistula and puerperal sepsis[1-12]. However, we know from our clinical experiences that other forms of morbidity are prevalent and it is thought that they potentially contribute to low quali-ty of life of Nigerian women[13].

Differences in the prevalence of maternal morbidity occur based partly on access to health services[14-16]. Because of the large proportion of births outside hospitals[17], hospital based studies may not be ideal for estimating postpartum morbidity since they may underestimate the actual prevalence of morbidity in the population. However, where no study had been done on the pattern and prevalence of postpartum morbidity as in our centre, and where no databases exist on postpartum morbidity as in

Nigeria, hospital based studies may be useful in justifying or not justifying expensive population-based studies by the results they generate.

Post partum morbidity is notoriously difficult to study partly because women often conceal symptoms that are not life threatening for various reasons. These range from inaccurate perception of such symptoms as necessary price to pay for motherhood to ignorance of the need to seek care[15,18].

We found few references to maternal morbidity following childbirth in South-East Nigeria. Prevalences and patterns of specific morbidities following childbirth in this area are therefore largely unknown. Although the paucity of studies may be a reflection of the peculiar difficulty in assessing maternal morbidity, it also makes further efforts at researching maternal morbidity more necessary. This study was therefore carried out in order to describe the prevalence of maternal morbidity following childbirth and to determine the socio-demographic and obstetric predictors of morbidity.

Materials and Methods

Study Area

The study was based in two tertiary hospitals in Enugu, South East Nigeria. Enugu is the capital of Enugu state of Nigeria. The city has an estimated population of 635451 inhabitants according to the 2006 census. The area is predominantly inhabited by ethnic Igbo. The inhabitants of the city are mainly civil servants and traders.

Study Population

The study population included all women who gave birth in Enugu capital city from 6 weeks from the onset of the study to the end of the study. Although most women with recent deliveries appear not to deem it necessary to attend the post natal clinic, they invariably bring their children for immunization and growth monitoring at the Infant welfare clinics of hospitals and health centres of their choices irrespective of where they had deliveries. The women seen in the infant welfare clinic would therefore usually be made up of women who delivered anywhere within the catchment area of the hospital. Consequently, the choice of infant welfare clinics was to maximize access to postpartum women. The two study hospitals run their welfare clinics every working day and have the busiest infant welfare clinics in the city.

Study Period

The study took place from January 1 to June 30 2009.

Sample Size

The sample size for this study was calculated based on the main outcome variable- the prevalence rate of self-reported maternal morbidities. Assuming an α error margin of 5%, 95% confidence level and an assumed population prevalence of 50% (from previous study in sub-Saharan Africa[18]), the minimum sample size n is given by $n= (Z_{\alpha/2})^2 p (1-p)/d^2$ where p=assumed population proportion, d=error margin; z=appropriate z value for 95% confidence interval. With p=0.5, z=1.96 and d=0.05 the minimum sample size n is 384. The sample size of 500 was chosen to enhance the power of the study.

Sampling Method

A purposive sample of consenting women attending the Infant Welfare Clinics at the University of Nigeria Teaching Hospital, Enugu State University Teaching Hospital both in Enugu was taken. After selection, the women were counselled and their consent obtained before the questionnaires were administered.

Exclusion Criteria

(a) Delivery outside the stated interval
(b) Failure to consent to participation in study

Data Collection

Data collection was by semi-structured questionnaires. In the study instrument, in order to translate specific morbidities to symptoms experienced by patients, we adopted the symptomatic case definetions of morbidities used for a validated postpartum morbidity survey reported by Fronczak et al[23] (see annex 1) and respondents were required to indicate by ticking if they had the symptoms or not following the birth of their last babies. Subsequently, they were required to write down any other symptoms they had that were not listed. The symptoms reported were subsequently translated to specific morbidities based on the adopted case definitions during data coding. The survey instrument was pilot-tested at the post-natal clinics.

Table 1 shows the prevalence of morbidities based on socio-demographic variables. About 74% of the respondents reported, at least, one morbidity. Table 2 shows the types and prevalence rates of reported morbidities among the respondents. Twenty-one different types of specific morbidities were identified by respondents.

The questionnaires were either self administered or interviewer-administered depending on what the respondent found more convenient. Trained assistants facilitated the administration of the questionnaires. Institutional consent was obtained before proceeding to the clinic.

Table 1. Showing the socio-demographic distribution of respondents who have, at least, one morbidity among a sample of women with recent deliveries in Enugu.

Socio-demographic variable	Frequency of respondents	Number with at least one morbidity	Percent prevalence within subgroup
Age			
10-20	10	8	80
21-30	342	250	73.1
31-40	126	99	75.0
41-50	14	12	85.7
51-60	2	2	100
Educational status			
No formal education	8	7	87.5
Primary education	50	39	78.0
Secondary education	136	94	69.1
Post secondary	206	156	75.7
Postgraduate	99	74	74.7
Occupation			
Housewife	181	127	70.5
Civil servant	119	79	66.4
Trader	89	76	85.4
Professional	49	39	79.6
Farmer	4	4	100
Student	15	10	66.7
Political office holder	8	8	100
Clergy	35	28	80.0
Religion			
Christianity	484	357	73.9
Roman catholic	270	205	75.9
Anglican	92	75	79.3
Pentecostal	79	45	57.0
Methodist	20	19	95.0
Islam	16	12	92.3
Ethnic group			
Igbo	458	339	74.2
Efik	19	18	94.7
Ibibio	8	3	37.5
Yoruba	4	4	100
Hausa/Fulani	3	2	66.7
Residence			
Urban	403	300	74.4
Rural	97	71	73.2

Data Analysis

This was done using SPSS for Windows version 11.5 (SPSS Inc Chicago IL). Prevalences of specific morbidities were determined by simple percentages. Bivariate contingency table analysis was done to determine the association of socio-demographic and obstetric variables with the probability of having a morbidity following childbirth. Pearson's Chi-square (or Fisher's Exact Test where appropriate) were used as tests of significance. Binary Logistic regression models were constructed to determine which socio-demographic or obstetric characteristics predicted specific morbidities when other variables were controlled for and results reported as adjusted odds ratios(OR) and 95% Confidence Intervals (C.I.) for the odds ratio. P-values ≤0.05 were considered significant.

Results

Out of 600 questionnaires distributed, 500 were returned completely filled giving a response rate of 83%. The 500 respondents who returned their questionnaires were used for the study.

Socio-Demographic and Obstetric Characteristics

A total of 500 women were studied. Their mean age was 29.4 years ±5.2. Over 98% of the respondents had formal education. Sixty-one percent had at least a university degree or its equivalent. Thirty-nine percent of respondents were essentially unemployed and 24% were civil servants. The respondents were predominantly Christians (97%) with just over half being Roman Catholics. Four percent of the respondents were single mothers. Most respondents (92%) were of the Igbo ethnic group. About 20% resided in rural areas.

Thirty-two percent of the respondents were primiparous while 10.4% were grandmultipara. Eighty-six percent of the respondents had vaginal deliveries while 13.6% delivered by caesarean section. Skilled birth attendants (doctors, midwives/nurses) took over 90% of the deliveries. Of the vaginal deliveries, 82.6% had spontaneous vaginal deliveries, 1.9% had assisted vaginal breech delivery while 2.1% had vacuum extraction.

Prevalence of Maternal Morbidity

Predictors of Morbidity

Table 3 shows the results of bivariate analysis to determine the association of socio-demographic characteristics of respondents with the probability of having at least a morbidity following childbirth. Type of delivery (x^2=13.14, p=0.00) and type of birth attendant (x^2=6.91, p=0.025) were significantly associated with reporting at least a morbidity. Binary logistic regression however showed that only delivery type (having normal delivery) significantly predicted decreased likelihood of having, at least,

Table 2. Showing the types and frequencies of specific maternal morbidity following childbirth among a sample of women with recent deliveries in Enugu.

Morbidity group	Number of respondents with morbidity (n=500)	Prevalence Percent
Gynaecological		
Dyspareunia	96	19.2
Perineal pain	78	15.6
Puerperal sepsis	57	11.4
Prolapse	50	10.2
Postpartum haemorrhage	37	7.4
Postpartum hypertension	31	6.2
Postpartum blues	11	2.2
Puerperal mastitis	1	0.2
Episiotomy breakdown	1	0.2
Vaginal noise during coitus	1	0.2
Urological		
Stress incontinence	65	13.0
Urge incontinence	56	11.2
Dysuria	44	8.8
Total incontinence (VVF)	4	0.8
Medical		
Malaria	167	33.4
URTI	139	27.8
Anemia	55	11.0
Pneumonia	16	3.2
Gastroenterological		
Faecal incontinence	20	4.0
Haemorrhoids	1	0.2
Anal pain	1	0.2

one morbidity following childbirth (adjusted OR-0.30, 95% C.I. 0.13, 0.66)

Predictors of Specific Morbidities

Table 4 shows the results of binary logistic regression to determine which socio-demographic characteristics predicted the commonest reported specific acute morbidities. Obstetric characteristics - type of delivery and type of birth attendant- were significant predictors of puerperal sepsis. Normal delivery predicted significant decreased likelihood of reportage of puerperal sepsis (OR 0.29, 95% C.I. 0.13, 0.66) whereas delivery by unskilled birth attendant predicted increased likelihood of puerperal sepsis (OR 6.99, 95% C.I. 1.23, 39.56). Socio-demographic characteristics had no significant effect on predicting puerperal sepsis.

With respect to postpartum haemorrhage, being para 4 or below (OR 0.29, 95% C.I. 0.11, 0.79) and normal delivery (OR 0.21, 95% C.I. 0.07, 0.58) were significant predictors of decreased likelihood of postpartum haemorrhage whereas delivery by unskilled birth attendant (OR 22.58, 95% C.I. 3.45, 147.81) and by a midwife (OR 2.70 955 C.I. 1.01, 7.27) were associated with an increased likelihood of postpartum haemorrhage.

Income group, residence and type of birth attendant were significant in predicting reportage of urinary tract infection. Whereas being in the no income group predicted increased likelihood of urinary tract infection following childbirth (OR 2.16, 95% C.I. 1.05, 4.46), residing in the urban area (OR 0.35, 95% C.I. 0.17, 0.72) and delivery by a midwife (OR 0.42, 95% C.I 0.20, 0.90) predicted decreased likelihood of reportage of urinary tract infection.

Low educational status (OR 2.16, 95% C.I. 1.16, 5.86) and delivery by unskilled birth attendant (OR 5.59, 95% C.I. 1.02, 30.77) predicted increased likelihood of reportage of anemia following childbirth by respondents whereas married status (OR 0.28, 95% C.I. 0.09, 0.90) predicted a decreased likelihood.

The likelihood of reportage of hypertension following childbirth was decreased by having a normal delivery (OR 0.20, 95% C.I. 0.08, 0.53). The remaining obstetric and socio-demographic characteristics had no significant effect on reportage of hypertension following childbirth. Table 5 shows the results

Table 3. Showing the results of bivariate analysis to determine the association of socio-demographic and obstetric characteristics of respondents with having a morbidity following childbirth among a sample of women with recent deliveries in Enugu, Nigeria.

Characteristic	Morbidity		Chi-square	p-value
	Yes	No		
Age category				
10-30yrs	94	258	0.51	0.28
31-50yrs	35	113		
Income group				
No income	55	136	1.44	0.14
Income earner	74	235		
Educational status				
Primary education or less	13	47		
Secondary education	42	100	1.74	0.42
Tertiary education	74	224		
Religion				
Christianity	128	359	2.29	0.11
Non-Christian	1	12		
Marital status				
Married	127	354	2.41	0.09
Single	2	17		
Residence				
Urban	103	300	0.06	0.45
Rural	26	71		
Parity category				
Para 1	34	129		
Para 2-4	84	201	4.67	0.10
Para 5 or more	11	41		
Type of Birth attendant				
Unskilled attendant	3	5		
Midwife	86	204	6.91	0.025*
Doctor	40	162		
Type of delivery				
Normal	120	293	13.14	0.00*
Not normal	9	78		

of binary logistic regression to determine the predictors of the commonest specific chronic morbidity following childbirth. Having no income (OR 0.50, 95% C.I. 0.25, 1.00), residing in the urban area (OR 0.51, 95% C.I. 0.26, 0.99), being para 4 or below (OR 0.27, 95% C.I. 0.12, 0.58) all significantly predicted decreased likelihood of reportage of stress incontinence following childbirth whereas delivery by unskilled birth attendant significantly increased the likelihood (OR 9.94, 95% C.I. 1.79, 55.16).

Being para 4 or below (OR 0.31, 95% C.I. 0.13, 0.78) and having secondary education (OR 0.19, 95% C.I. 0.07, 0.52) significantly predicted a decreased likelihood of reportage of utero-vaginal prolapse following childbirth by respondents. The likelihood of reportage of dyspareunia is increased by being a primipara (OR 3.15, 95% C.I. 1.21, 8.22). Acute medical morbidities such as malaria, upper respiratory tract infection and pneumonia were not predicted by any socio-demographic or obstetric characteristics.

Discussion

The study suggests a high prevalence rate of morbidity following childbirth in the population sampled. This is similar to the findings in a study in Zambia[18]. The high prevalence rate of morbidity following childbirth has also been noted in studies from outside Africa[19-23]. The findings in this study involving women whose deliveries were taken mostly by skilled birth attendants in health facilities may represent

Table 4. Showing the results of binary logistic regression to determine the predictors of acute morbidity following childbirth in a sample of women with recent deliveries in Enugu.

variable	Sepsis		PPH		UTI		Hypertension		anemia	
	OR	P-value	OR	P-value	OR	P-value	OR	P-value	OR	P-value
Age category (yrs)										
10-30	1.98	0.08	0.87	0.76	1.16	0.74	0.79	0.62	0.62	0.22
31-50‡	-	-	-	-	-	-	-	-	-	-
Income group										
No income	o.80	0.47	1.85	0.15	2.16	0.04*	0.70	0.44	1.84	0.08
Income earner‡	-	-	-	-	-	-	-	-	-	-
Educational status										
Primary	1.92	0.10	0.37	0.13	0.44	0.17	0.91	0.87	2.61	0.02*
Secondary	0.82	0.57	720.	0.45	0.81	0.59	0.66	0.39	1.29	0.49
Tertiary‡	-	-	-	-	-	-	-	-	-	-
Religion										
Christianity	0.62	0.43	1.13	0.88	0.30	0.07	0.39	0.24	1.12	0.86
Islam ‡	-	-	-	-	-	-	-	-	-	-
Marital status										
Married	0.51	0.26	0.36	0.18	1.66	0.49	0.60	0.56	0.28	0.03*
single‡	-	-	-	-	-	-	-	-	-	-
Residence										
Urban	0.78	0.41	0.94	0.90	0.35	0.00*	1.95	0.24	1.24	0.58
Rural‡	-	-	-	-	-	-	-	-	-	-
Parity category										
Para 1	0.58	0.26	0.29	0.03*	0.77	0.65	0.66	0.49	0.51	0.16
Para2-4	0.51	0.13	0.29	0.02*	0.57	0.31	0.61	0.34	0.48	0.09
Para 5 or more‡	-	-	-	-	-	-	-	-	-	-
Route of delivery										
Vaginal	0.29	0.00*	0.21	0.003*	0.62	0.24	0.20	0.001*	0.53	0.10
Abdominal‡	-	-	-	-	-	-	-	-	-	-
Birth attendant										
Unskilled	6.99	0.03*	22.6	0.001*	0.84	0.89	4.65	0.21	5.59	0.048*
Midwife	1.56	0.24	2.70	0.05*	0.42	0.03*	1.12	0.82	0.57	0.12
Doctor‡	-	-	-	-	-	-	-	-	-	-

OR=adjusted odds ratio; PPH=postpartum haemorrhage; UTI=urinary tract infection
*Statistically Significant; ‡comparison group

a tip of the iceberg when compared to what may be seen in the rural areas where more than 60% of deliveries are taken by unskilled birth attendants[17]. The high prevalence of problems after childbirth may be the result of inadequate attention to women during the prenatal and intrapartum periods. It indicates a huge need for postpartum care in the population sampled and this need might have been be largely unmet given poor attendance to postnatal clinics by parturients. The pattern of reported morbidity differs from reports in Western countries. The study suggests a high prevalence of non-obstetric post partum morbidity such as malaria, upper respiratory tract infection, pneumonia and urinary tract infection the occurrence of which may not necessarily be related to obstetric events or practices. This is unlike the reports from western countries and South-East Asia[19-23]. Similarly, the reportage of serious morbidities such as puerperal sepsis, haemorrhage, vesicovaginal fistula, hypertension and anemia is unlike reports from western countries that show that haemorrhoids, tiredness, perineal pain, depression, constipation, back ache, headache, bladder symptoms and dyspareunia predominate [19,20,24]. The occurrence of the serious morbidities related to inadequate or poor maternal care in the population sampled is surprising given the high proportion of births by skilled birth attendants.

The correlates of specific morbidities in this study appear to involve obstetric characteristics more than

Table 5. Showing the results of binary logistic regression to determine the predictors of chronic gynaecological / obstetrical morbidity among a sample of women with recent deliveries in Enugu.

variable	Perineal pain		Dyspareunia		Prolapse		Stress incontinence		Anal incontinence	
	OR	P-value	OR	P-value	OR	P-value	OR	P-value	OR	P-value
Age category (yrs)										
11-30	1.66	0.14	1.21	0.54	2.61	0.02*	0.68	0.27	0.64	0.43
31-50‡	-	-	-	-	-	-	-	-	-	-
Income group										
Non income earner	0.60	0.08	0.85	0.53	0.57	0.13	0.50	0.05*	0.27	0.06
Income earner‡	-	-	-	-	-	-	-	-	-	-
Educational status										
Primary	1.63	0.18	0.58	0.20	0.44	0.11	1.06	0.90	2.40	0.16
Secondary	0.67	0.21	0.79	0.40	0.19	0.00*	1.41	0.29	0.32	0.16
Tertiary‡	-	-	-	-	-	-	-	-	-	-
Religion										
Christianity	0.15	0.00*	0.27	0.02*	0.62	0.49	0.30	0.09	0.21	0.11
Islam ‡	-	-	-	-	-	-	-	-	-	-
Marital status										
Married	1.22	0.73	0.58	0.30	0.30	0.053	3.26	0.13	0.96	0.97
single‡	-	-	-	-	-	-	-	-	-	-
Residence										
Urban	0.71	0.27	0.71	0.23	0.64	0.23	0.51	0.046*	0.67	0.49
Rural ‡	-	-	-	-	-	-	-	-	-	-
Parity category										
Para 1	1.15	0.76	3.15	0.02*	0.31	0.03*	0.38	0.03*	0.36	0.15
Para2-4	0.83	0.66	1.85	0.19	0.31	0.01*	0.27	0.00*	0.24	0.02*
Para 5 or more‡	-	-	-	-	-	-	-	-	-	-
Route of delivery										
Vaginal	1.70	0.16	1.03	0.93	1.76	0.30	0.74	0.46	0.53	0.42
Abdominal‡	-	-	-	-	-	-	-	-	-	-
Birth attendant										
Unskilled	2.38	0.30	0.00	0.99	2.20	0.52	9.94	0.01*	9.08	0.11
Midwife	0.58	0.06	0.84	0.52	1.32	0.44	1.37	0.38	3.50	0.08
Doctor ‡	-	-	-	-	-	-	-	-	-	-

OR=adjusted odds ratio; ‡comparison group *Significant.

socio-demographic characteristics. For specific morbidities related to pelvic floor malfunction such as prolapse, stress urinary incontinence and faecal incontinence the significant predictive maternal characteristics included type of birth attendant, type of delivery and parity. Expectedly low parity predicted decreased likelihood of reportage of all of them. The association of parity and method of birth with symptoms of pelvic floor dysfunction has been reported in previous studies[20,21]. Damage to the pelvic floor muscles and nerves is thought to occur during vaginal delivery and even during pregnancy itself and low parity reduces the chances of such damage.[25-28] Similarly assisted vaginal delivery require extra mechanical forces acting on the baby along the genital tract and these forces may cause damage to the pelvic floor supports[29]. The influence of delivery by unskilled birth attendant on morbidities arising from pelvic floor dysfunction may be due to injudicious use of such mechanical forces such as fundal pressure during delivery.

Specific morbidities arising as a result of adverse events in the genital tract during delivery such as postpartum haemorrhage and puerperal sepsis are also significantly predicted by parity, type of delivery and type of birth attendant. The increased likelihood of sepsis associated with delivery by unskilled birth attendants is hardly surprising. This is because unskilled birth attendants are more likely to conduct delivery with unsterile instruments and in unsterile environments. The decreased likelihood of sepsis with normal deliveries compared to non-normal deliveries may be due to less instrumentation and tissue handling or damage with the former.

The increased likelihood of reportage of postpartum haemorrhage following deliveries by unskilled birth attendants compared to deliveries by midwives and doctors may be due to low knowledge of the practices to prevent postpartum haemorrhage among unskilled attendants compared to skilled attendants. The decreased likelihood of postpartum haemorrhage with normal delivery and with low parity is consistent with current knowledge. Low parity does not impair uterine muscle tone and normal delivery exposes the patient to less chances of genital tract injury.

The relationship between medical conditions causing morbidity with some socio-demographic characteristics may be difficult to explain. The association of no-income status and urinary tract infection may be an indirect one through poor hygienic practices which poverty and ignorance can engender. Similarly the decreased likelihood of reportage of urinary tract infection among urban dwellers and those delivered by midwives cannot be explained by this study. The increased likelihood of reportage of anemia among respondents with low educational status may be related to the possible relationship of low educational status with low income status and hence poor nutrition. Similarly, the decreased likelihood of reportage of anemia following childbirth associated with married status may be related to better upkeep and nutrition available to married women compared to single women.

The reduced likelihood of reportage of postpartum hypertension associated with normal delivery compared to non-normal may be due to bias arising from the likelihood that ante partum hypertension / pre-eclampsia might have been the indication for abdominal delivery or for vacuum extraction to expedite second stage of labour.

The major drawbacks of this study include the fact that it is hospital based which makes it impossible to generalize the findings to the entire population. Another is the fact that the reportage of symptoms was done retrospectively thereby necessitating recall of events in the past. Poor recall ability could have limited the respondents. Yet another is that self reported symptoms are subjective indices and may not tally with medical diagnosis.

Despite these drawbacks, we conclude that women in this sample were beset by many symptoms following the birth of their last babies. This suggests a huge need for post-partum care in the population sampled. The study also suggests that method of delivery, type of birth attendant and parity are the principal predictors of specific morbidity following childbirth in the population sampled. Women who had abdominal or assisted vaginal deliveries, women delivered by unskilled birth attendants and those who have more than five deliveries may therefore have to be singled out for specific counselling in clinic settings on the imperative of postnatal care

visits at 6 weeks or whenever they notice symptoms. A population-based study to assess the actual prevalence of morbidity in the population is recommended in order to determine the magnitude of the problem of maternal morbidity following childbirth.

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