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COMPLICATIONS OF UNSKILLED HOME BIRTH: A CROSS SECTIONAL ANALYSIS OF THIRD STAGE OF LABOR.

Falak Sehar Sahito[1*], Samia Shuja[2]

ABSTRACT:

Introduction: Child birth at home is easily approachable but associated with certain complications which if not dealt timely can lead to severe morbidity and even mortality of mother and child. **Objective:** To evaluate the complications encountered during home birth, in women who presented to a tertiary care hospital for further management. **Methodology:** A descriptive cross-sectional study was conducted at Jinnah Postgraduate Medical Centre (JPMC) Karachi, after approval from research evaluation unit. Total 206 women, who delivered at home by traditional birth attendant/ Dai and then were referred to the hospital obstetrical emergency unit for further management of a complicated third stage of labor, were enrolled in the study after fulfillment of selection criteria and informed consent. Nonprobability purposive sampling was done. Demographic and other required data was collected on predesigned proforma. **Results:** Patients presented with multiple complications. Majority of patients presented with postpartum hemorrhage due to uterine atony (56.3%), followed by retained product of conception (54.4%), retained placenta (26.7%) and traumatic lesion (21.8%). Few (8.7%) presented with puerperal sepsis also. Most patients presented within 24 hrs. of delivery. P-value < 0.05 was taken as significant. **Conclusion:** This study concluded that home birth is associated with increased maternal morbidity, where postpartum hemorrhage due to uterine atony is the most common presentation. Patient often present with multiple complications, which necessitate skilled training of traditional birth attendants/Dai, in terms of prevention of postpartum hemorrhage (including active management of third stage of labor) and infection control measures.

Key Words: Home child birth, postpartum hemorrhage, sepsis, perineal trauma, traditional birth attendants.

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INTRODUCTION:

Child birth at home is easily approachable but associated with certain complications which if not dealt timely can lead to severe morbidity and even mortality of mother and child [1]. Although there is great advancement in reproductive health services in Pakistan, but still in some areas it is a cultural norm and people favor child birth at home by traditional birth attendants (TBAs) or Dai. The reasons are that, it is cheaper, convenient and TBAs who conduct deliveries are reliable person of their locality. Several factors like poverty, illiteracy, non-availability/distant maternity center, lack of transportation facility, absence of a porter and above all, ignorance regarding complications of delivery, has contributed to the trend of home birth.[2] However reasons to choose home birth in developed countries are slightly different.[3, 4] Home birth conducted by untrained traditional birth attendants or Dai, is often associated with ante-natal, intra-natal and post-natal complication.[5] It is estimated that one mother dies in every twenty minutes due to pregnancy-related complications, while health facility is availed only in fatal complications.[6] The World Health Organization (WHO) recommends only skilled care at child birth to reduce the rate of maternal morbidity and mortality. The maternal mortality ratio in Pakistan is 186 deaths per 100,000 live births, which is 26% higher in rural areas as compared to urban areas, and will reduce further if home birth occurs in the presence of skilled birth attendants.[7] The third stage complications that are mismanaged at home, should be qualified and quantified to measure the gist and thus proper allocation of health budget, training of birth attendants, will certainly produce a big difference as quoted by studies [8]. Incorporation of TBAs in formal health systems has led to increase in skilled birth attendance and reduced complications.[8] In a third world country like Pakistan it is not possible for everyone to birth in a hospital setting. In addition the load of birth that is complicated at home is extensive in terms of health, economy and systems. The rationale of the study is to determine the magnitude of complications in home delivery and to draw attention of concerned authorities toward existing challenges and put forth possible solution thus help to reduce the burden of maternal morbidity and mortality in Pakistan. Our women, who solely are dependent on these TBAs/Dai, are at risk of enhanced maternal morbidity and even mortality. Timely identification, proper referral and counseling of family are essential skills to be built in TBAs.

METHODOLOGY:

A descriptive cross sectional study was performed at the Department of Gynecology and Obstetrics, Jinnah Postgraduate Medical Centre (JPMC), Karachi. The study lasted for twenty two months to achieve sample size of 206 [(2)] (at 95% confidence interval, by software Open Epi). Non-probability consecutive sampling was used. Women, 16 to 45 years of age, sure of period of gestation and above 34 weeks and delivered at home by traditional birth attendant / Dai, attended outpatient department /emergency within 6 weeks postpartum were enrolled in the study. Women with history of child birth in clinical setting, referrals from other hospitals after some management, labor initially handled at home but referred to hospital before any complication, women with bleeding tendencies or clotting disorders and non-consenting women/families were excluded. The purpose, procedure, risks and benefits were explained to the study participants and informed consent was taken. Brief history was extracted from women/family, followed

by general physical examination. Abdominal examination was done to assess size and tone of uterus. Vaginal examination was done to detect presence of hemorrhage, unhealthy lochia, local discharge and injuries, retained placenta (complete or fragments) and findings noted. Laboratory investigations sent including hemoglobin, white blood cell and platelets count, clotting prolife, high vaginal swab for culture and sensitivity and ultrasound pelvis where clinical examination was doubtful. Entire information was recorded on a pre-designed proforma. The data feeding and analysis was on SPSS (Statistical Packages of Social Sciences) Version 21.0. A descriptive statistical analysis of continuous and categorical variables was performed. Data on continuous variable including age, parity and gestational age was presented as Mean± SD, and categorical variable i.e. postpartum hemorrhage due to uterine atony, retained placenta / retained product of conception, traumatic lesions and puerperal sepsis were presented as frequency and percentage. Stratification was done to control confounding factors in variables like age, parity, gestational age and duration since delivery. The impact on outcome variable was measured through Chi-square test and p-value < 0.05 was taken as significance.

RESULTS:

Total 206 women participated in the study. The mean age of women was 27.0 ± 5.27 years and the mean parity was 2 (range 1-10), mean gestational age was 38.2 ± 1.69 weeks, whereas 73.3% cases were complicated within 24 hours of delivery. **Table 1** shows the frequencies of complications of home deliveries. **Table 2** shows the relationship of complications with age, parity and gestational age of women. **Table 3** shows the presentation of complication in relation to duration since delivery.

TABLES:

Table 1: Frequency distribution of Complications encountered during home birth

Complication	n (%)
Postpartum hemorrhage due to uterine Atony	116 (56.3)
Postpartum hemorrhage due to Retained product of conception	112 (54.4)
Retained Placenta	55 (26.7)
Traumatic Genital lesions	45 (21.8)
Puerperal sepsis	18 (8.7)
Total	346 (167.9)*

n: frequency, % percentage.
Total frequencies and percentages of complications exceed sample size number as more than one complication was present in some individuals.

Table 2: Association of Complications with Age, Parity, and Gestational age

Variables	n	Complications in home deliveries (n=206)				
		Uterine Atony n (%)	RPOC n (%)	Retained Placenta n (%)	Traumatic Genital lesions n (%)	Puerperal sepsis n (%)
Age (years)						
<25	64	40 (62.5)	37 (57.8)	16 (25.0)	14 (21.9)	6 (9.4)
25-29	70	33 (47.1)	40 (57.1)	14 (20.0)	17 (24.3)	6 (8.6)
30-34	46	24 (52.2)	24 (52.2)	18 (39.1)	8 (17.4)	4 (8.7)
≥35	26	19 (73.1)	11 (42.3)	7 (26.9)	6 (23.1)	2 (7.7)
P-value		0.083	0.544	0.149	0.849	0.995
Parity						
1	87	42 (48.3)	50 (57.5)	16 (18.4)	21 (24.1)	9 (10.3)
2-3	62	33 (53.2)	35 (56.5)	17 (27.4)	13 (21.0)	7 (11.3)
4-10	57	41 (71.9)*	27 (47.4)	22 (38.6)*	11 (19.3)	2 (3.5)
P-value		0.017	0.456	0.027	0.774	0.254
Gestational age (weeks)						
<37	46	22 (47.8)	28 (60.9)	13 (28.3)	3 (6.5)	7 (15.2)
37-39	114	71 (62.3)	56 (49.1)	35 (30.7)	34 (29.8)*	6 (5.3)
≥40	46	23 (50.0)	28 (60.9)	7 (15.2)	8 (17.4)	5 (10.9)
P-value		0.154	0.243	0.129	0.004	0.110

n; number, % percentage, RPOC: Retained products of conception***** Statistically significant P <0.05

Table 3: Association of Complications with duration since delivery

Duration since Delivery (hrs.)	**Variable**		**P-Value**
	Uterine Atony		
	Yes (n=116)	No (n=90)	
< 24 hours	87 (75.0%)	64 (71.1%)	0.531
≥ 24 hours	29 (25.0%)	26 (28.9%)	
	Retained Placenta		
	Yes (n=55)	No (n=151)	
< 24 hours	43 (78.2%)	108 (71.5%)	0.339
≥ 24 hours	12 (21.8%)	43 (28.5%)	
	Retained product of conception		
	Yes (n=112)	No (n=94)	
< 24 hours	82 (73.2%)	69 (73.4%)	0.976
≥ 24 hours	30 (26.8%)	25 (26.6%)	
	Traumatic Genital Lesions		
	Yes (n=45)	No (n=161)	
< 24 hours	39 (86.7%)	112 (69.6%)	0.022 *
≥ 24 hours	6 (13.3%)	49 (30.4%)	
	Puerperal sepsis		
	Yes (n=18)	No (n=188)	
< 24 hours	5 (27.8%)	146 (77.7%)	0.001 **
≥ 24 hours	13 (72.2%)	42 (22.3%)	

** Puerperal sepsis (p<0.01) and * traumatic lesions (p<0.05) significant association.

DISCUSSION

This study has analyzed the complications encountered in home child birth, their frequencies, relation with age, parity, gestational age and the time lapse between delivery and referral to a tertiary care hospital. The population presented to Jinnah Postgraduate Medical Centre, was having equal chance to deliver at hospital or home, but still these patients preferred home, and unfortunately encountered a complication that had to be managed at a tertiary hospital.

Majority of referred women were primi Para as compared to multiparous, which is comparable to the other study.[9] Our study showed that home deliveries were associated with third stage complications, especially, postpartum hemorrhage due to uterine atony (56.3%) as the most frequent one, followed by retained product of conception (54.4%), which is in accordance with other studies.[2, 10] Whereas *Tuladhar H.et al.*[11] has reported retained placenta as the most common complication of home birth.

In our study traumatic genital lesions were found in 21.8% of women which is analogous to the study by *Galera-Barbero TM et al.*[9] that indicate less traumatic genital lesions in home deliveries. Primi parous women sustained more perineal trauma at home while post-partum hemorrhage was more in multigravida as expected.

In our study puerperal sepsis was found in 8.7% of cases of home birth, which is in accordance with the study by *S Marwah et al.*[12] that has reported home birth an important risk factor for puerperal sepsis, however it is undiagnosed and underreported and home birth.[13] Regarding the relationship between different complications and age, uterine atony was more common (73.1%) among women aged >35 years, which is similar to study by *Ekin, A et.al*. [14] although not reached statistical significance (p-value 0.083). We have found significant relationship of grand multiparity (4-10) with uterine atony and retained placenta, which was statistically significant and in accordance to the studies done by *Singh, Sunder Pal, et al.*[15]

However there are studies that negate that home birth is associated with more complication. This may be due to the fact that those deliveries were low risk and were conducted by trained and skilled mid wives.[9, 16]

In developed countries, certain criteria have to be fulfilled by women in order to give a home birth, which is not followed in underdeveloped countries. Certain studies have shown the positive impact of focused investment and education of unskilled birth attendants regarding basic birth process, management of postpartum complications on the maternal health.[17] Offering incentives, encouragement of referral if any complication ensue and thus building a chain of health care system at elementary level, would definitely reduce the maternal morbidity and ultimately the mortality rate in Pakistan.

The strength of the current study is that, this study has measured the burden of adverse outcomes/complications of home deliveries. The study topic still needs vast exploration. Work in this area will also help to provide feedback to the health care authorities, so as to draw their attention for better planning of the reproductive health of women and proper allocation of resources. There are some important limitations/ flaws of our study too. For example, the sample size was small and there was no control group of women who had home deliveries without any complications, also no hospital control group was included in the same period of time. We only included third stage complications, and mortality was not included in the study.

CONCLUSION

This study concluded that home deliveries that are conducted by unskilled traditional birth attendants are associated with third stage complications, especially postpartum hemorrhage due to uterine atony and retained products of conception. Health system should engage these TBAs toward skilled learning to minimize maternal morbidity and mortality associated with natural process of child birth.

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