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Magnitude of Birth Preparedness among Pregnant Women Seeking Skilled Birth Services at a Rural Hospital in Western Uganda: Health Facility Based Cross Sectional Study

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Abstract: Although the practice of preparing for childbirth among pregnant women is associated with 24.0% and 53.0% reduction in neonatal and maternal mortality respectively in low income countries, it remains inadequately practiced in low income countries. This study sought to assess the level of birth preparedness among pregnant women at one of the rural hospitals in Uganda. This was a descriptive cross sectional study conducted among 332 pregnant women in first stage of normal labour between April and May 2017 at Kagadi hospital, a rural hospital in Uganda. A pregnant woman was considered prepared for childbirth if she fulfilled at least three of the following five birth preparedness elements; saving money, booking birth companion, identifying home caretaker, having at least six birth items and booking means of transport to the health facility. Data were collected using a researcher administered questionnaire. Nearly all respondents had identified birth companion (93.7%) and prepared at least one birth material (97.3%). However, only about half of respondents had procured at least six birth items (48.2%). A small proportion of respondents had reasonable money savings of at least 27.7 US dollars (20.7%). Slightly less than half of respondents had booked someone to take care of their homes (41.3%) and had booked means of transport (40.0%) Overall, only 28.3 percent of the participants had fulfilled at least three of the five elements and were considered as prepared for birth. We observed that most of the pregnant women were not prepared for childbirth. To scale up birth preparedness in rural settings, we recommend that providers of antenatal care services should intensify on assisting pregnant women to draw and continuously review birth plans. We further recommend that birth plan should focus on the five elements commended by the Ministry of Health.

Keywords: Magnitude, Birth Preparedness, Skilled Birth Services, Rural, health facility based.

INTRODUCTION

Reports on monitoring the health of women and children indicate that the global maternal mortality ratio has been declining at an average annual reduction rate of 2.3 percent over time [13, 14]. However, whereas this reduction looks impressive, it is far less than the annual reduction rate needed to reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2030 [15].

Uganda like many other African countries still has one of the highest maternal mortality ratio of 336 deaths per 100,000 live births [12]. The direct causes of maternal mortality such as severe post-partum haemorrhage, hypertensive disorders, sepsis, abortion and obstructed labour still claim lives of many pregnant women partly because of delays to reach the health facility and to access appropriate care [13, 14]. These delays are to a certain extent as a result of failure of the

pregnant women to prepare for birth and complications that may rise [13, 14].

Birth Preparedness (BP) is an integral component of focused antenatal care which involves planning for normal birth and anticipating the actions needed in case of an emergency [1]. BP includes identification of the following elements by the pregnant woman; the funds needed to meet labour or pregnancy related emergency expenses, pregnant woman's birth companion during labour and delivery or in case of emergencies, home caretaker who will stay at home and take care of other children or family property, and means of transport to the health facility before or during the time of labour or in case of emergencies [7]. Since it is not possible to precisely predict which pregnant women will experience life-threatening obstetric complications or even when labour will start, encouraging all pregnant women to prepare for delivery without delay has been

identified as one of the most important intervention in safe motherhood [9].

Findings from one of the studies revealed that BP practice is associated with 24 percent significant reduction of neonatal mortality risk and 53 percent reduction in maternal mortality risk [11]. However, many studies indicate that the level of BP practice in many developing countries still remains low. A study in Ethiopia revealed that only 20.5 percent of the pregnant women identified a skilled attendant, 7.7 percent identified means of transport to the health facility and 34.4 percent had saved money for delivery costs [3]. Similarly, a study in Nigeria concluded that 15.6 percent of the pregnant women in labour had not set aside funds to cater for transport to the hospital during labour while 34.8 percent had not identified a birth companion [10]. In Kenya, a study showed that the overall level of BP was 15 percent [2]. However, all studies mentioned above used varying elements to measure the level of BP.

In Uganda, previous studies also showed that preparation for childbirth among pregnant women and their families still remained very low [16]. In south west Uganda, a study revealed that the overall level of BP was 35 percent [5] while another study in the same sub region indicated that the extent of birth preparedness did not differ significantly. This is substantiated by the study which confirmed that only 44.3 percent of the pregnant women made savings for any eventuality such as preparation for complications and 43.4 percent were accompanied by the husband to the labour ward [6]. However, this study did not measure the level of preparedness of other elements. A similar study in the eastern part of Uganda disclosed that the level of BP was as low as 25 percent.

However, all studies on BP in Uganda did not consider five elements of BP recommended by the ministry of health to measure its magnitude. In addition, since then, many interventions to improve the level of BP had been launched and implemented in the country. Therefore, the study intended to measure the current status of the level of BP among pregnant women while considering its five recommended elements.

MATERIALS AND METHODS

Study design and population

Cross sectional study design was used in this study. All respondents were recruited into the study irrespective of whether they were birth prepared or not. The study was carried out in maternity ward of Kagadi hospital, a rural government general hospital in western Uganda between 7th April 2017 and 20th May 2017 and included 332 pregnant women at term who were in first stage of normal labour. Pregnant women who had strong and more frequent uterine contractions were excluded from the study to avoid information bias.

Sample size determination and sampling technique

Sample size was determined using Kish and Frankel formula for a single population proportion; the value from standard normal distribution (Z) at 95% Confidence Interval (CI) was set at 1.96, for the proportion (p), we considered the proportion of 0.35 for pregnant women who were found to be prepared for birth in south western Uganda [12] and q was arrived at by subtracting the value of p from the constant value of 1. Respondents were consecutively recruited into the study as they sought skilled birth attendance services from maternity ward.

Data collection methods

Pregnant women who had come to deliver at maternity ward were identified using the level of cervical dilatation recorded in their clinical notes to ascertain that they were in first stage of labour. We used questionnaire to collect data. The questionnaire was both in English and Runyoro Rutooro dialect, a local language commonly spoken. Using the language of choice by the participants, a researcher asked questions as they appeared in the questionnaire and recorded responses in the same questionnaire accordingly.

Five commended elements of BP by the Ministry of Health (MoH) were included in the questionnaire after being further modified with the guidance of Birth Preparedness Tool (BPT). These elements were: i) saving Uganda shillings equivalent to at least twenty eight US dollars that would be needed for transport, feeding and other needs, ii) whether she had earlier booked who would take care of home when she is at the health facility for delivery or in case of any emergency (sister, in-law, maid, brother, close friend, neighbor, any other mature close relative), iii) if she had earlier identified a birth companion (sister, spouse, in law, neighbor, maid, close friend, mother, any other mature close relative), iv) whether she had enough birth materials (at least six of the following including 4 pairs of gloves): 4 pairs of gloves, basin/bucket, baby clothing, mother's clothing, cotton, razor blade, plastic sheet, soap, sanitary pads and three pieces of string) and v) if had earlier booked means of transport to the health facility (boda boda motorcycle, private vehicle, hospital ambulance, owned motorcycle or motor vehicle).

In order to obtain credible study findings, on the element of 'earlier made plan of who to stay at home', for the pregnant women who did not have other children or other people or domestic property at home that required a caretaker were arbitrary considered as having made earlier plan of how to live home safe and secure. Regarding 'booking means of transport' element, pregnant women got a score if they had formal arrangement with either boda boda operator or private vehicle/ambulance driver to the extent of having their mobile telephone numbers. For those who owned vehicles or motorcycles, it was taken that there was formal arrangement for transport if women reported that

there were arrangements to ensure that the motorcycle/motor vehicle had a rider/driver as well as fuel all the time including night.

Since there were five indicators for BP practice, a pregnant woman who had prepared at least three of the five elements, was regarded as prepared for labour and child birth. A woman who scored on less than three elements was regarded as not prepared for labour and child birth.

Since these five elements did not hold the same importance and the absence or presence of some items predicted the relevance of others, the following two elements were given special attention. For a pregnant woman to be considered as prepared, at least the element of saving money was taken to be central and therefore needed to be one of at least three elements that

determined the overall level of BP. Regarding birth items, a pregnant woman scored on this if four pairs of gloves were among at least six items needed to score on this element.

DATA ANALYSIS

Data was analyzed using SPSS version 23. Demographic characteristics were summarized using descriptive statistics. We used univariate statistical model to understand the level of birth preparedness.

Ethical considerations

Approval from Institutional Review Board (IRB) at the College of Health Sciences (CHS), Makerere University was obtained. Written consent was obtained from all study participants.

Table-1: Socio-demographic characteristics of participants (n=332)

Demographics	Frequency (mean)	Percentage (%)
Age		
≤ 19 years	102 (23.6)	30.7
>19 years	230	69.3
Occupation		
Farming	139	41.9
House wife	100	30.1
Others	93	28
Number of people per house hold		
≤3	202	60.8
>3	130	39.2
Marital status		
Married	117	35.2
Not married	215	64.8
Level of education		
None	37	11.1
Primary	188	56.6
Secondary	97	29.2
Tertiary	10	3.0
Level of education of spouse		
None	12	3.6
Primary	154	46.4
Secondary	140	42.2
Tertiary	26	7.8
Distance to the nearby health facility		
< 5 km	96	28.9
≥ 5 km	236	71.1
Monthly income of respondent (USD)		
< 83.3	236(33.2)	71.0
≥83.3	46	13.9
No earning	50	15.1
Monthly income of spouse (USD)		
< 83.3	247	74.4
≥83.3	70	21.1
No earning	15	4.5
Discussion with spouse about BP		
Yes	233	70.2
No	99	29.8

RESULTS**Socio-demographic and maternal characteristics**

A total of 332 pregnant women with mean age of 23.6 participated in the study. Most of the pregnant women, 215 (64.8%) were not married. More than half of women, 233 (70.2%) had discussed BP plan with their spouses before onset of labour and only two thirds, 219 (66.0%) intended to conceive. Only 97 (29.2%) had completed secondary level of education as compared to 140 (42.2%) of their spouses. Most of the participants, 236 (71.1%) lived ≥ 5 kilometers away from the nearby maternity health centre and earned Uganda shillings equivalent to < 83.3 US dollars per month (mean 33.2 USD). Only 145 (43.8%) had completed at least four or more ANC visits. About half of the respondents, 184 (55.3%) were not escorted by their spouses but reviewed birth plan together with midwives during ANC. A significant proportion of respondents (69.7%) reported that they were health educated about birth preparedness during ANC visits.

Magnitude of birth preparedness

Nearly all pregnant women had identified birth companion (93.7%) and prepared at least one birth material (97.3%). However, a small proportion of women (21.7%) had their spouses as their companions and brought < 6 birth items including four pairs of sterile gloves (51.8%). Our study found that over two third (83.1%) of women saved at least some money. However, a small proportion of them (20.7%) had reasonable money savings of Uganda shillings equivalent to at least 28 US dollars. Slightly less than half (41.3%) of women had booked someone to take care of their homes and had booked means of transport (39.8%). Conversely, most of those who booked means of transport, had booked bodaboda motorcycles as their quick, simple and comfortable means (25.6%). Overall, only 28.3 percent of women had fulfilled at least three of the five elements and were considered as prepared for birth.

Table-II: Magnitude of birth preparedness among study participants (n=332)

Element/variable	Frequency(mean)	Percentage (%)
1. Had saved money		
Yes	276	83.1
No	56	16.9
Amount of money saved (USD)		
< 28.0	219	65.9
≥ 28.0	57(25.8)	17.2
Never saved	56	16.9
2. Identified home care taker		
Yes	137	41.3
No	195	58.7
3. Booked means of transport		
Yes	132	39.8
No	200	60.2
Means of transport booked		
Bodaboda	85	25.6
Others	47	14.2
None	200	60.2
4. Identified birth companion		
Yes	311	93.7
No	21	6.3
Individual identified as birth companion		
Spouse	72	21.7
Mother or in-laws	189	56.9
Others	50	15.1
None	21	6.3
5. Had birth items		
< 6 items	172	51.8
≥ 6 items	160	48.2
Overall Magnitude of BP		
Prepared	94	28.3
Not prepared	238	71.7

DISCUSSION

Nearly all pregnant women had earlier identified a birth companion. However, our study found

that only about a quarter of women had their spouses as birth companions. A woman not having a spouse as companions was probably because majority of them

were not married. This however, meant that many of these pregnant women who were in labour did not receive psycho-social support from their spouses. In addition, mother in laws who were companions of the majority of women, did not have legal and moral authority to make decisions in case obstetric emergency occurred. Our study found a higher practice of identifying a birth companion compared to a study at Kenyatta hospital in Kenya where it was only 65.2% [2]. On contrary, the study found that a woman having their spouses as birth companions was twice lower than what had been earlier found in western Uganda [6].

Our study found that almost all pregnant women who participated in the study saved some money although just about a quarter had sufficient amount saved. Majority of women saving some money demonstrated that they had positive attitude towards the practice and knew the reason for doing so. However, insufficient amount they saved was probably due to their low income and lack of clarity on how much they needed to save. Saving inadequate amount of money meant that such women were not able to meet some critical labour and child birth expenses including referral to a higher level in case demand rose. Findings from our study revealed higher proportion of women who saved some money compared to those in Ethiopia where it was only a third of pregnant women [3].

For the pregnant women to have been considered as prepared for childbirth, they partly required to have earlier booked means of transport. However, our study revealed that majority did not do so. This meant that majority of them could not have reached at the health facility on time in case an obstetric emergency occurred. These findings were contrary to the findings in south western Uganda. In south western Uganda, the practice of booking means of transport was twice higher compared to what our study found [4, 5].

In Uganda like any other developing countries, it is common to find that government health facilities have stock out of essential birth items and pregnant women are expected to bring some of them. Surprisingly, our study found that a significant proportion of women did not have sufficient number of birth items especially surgical gloves, surgical blade, cotton, baby's clothes and cord ligatures. This meant that in event of obstetric emergencies, there were no sufficient means put in place by such pregnant women to swiftly access care. Findings from this study were contrary to what was found in south western Uganda where the preparation for birth items was twice higher [5].

Our study found that majority of pregnant women who sought skilled birth services from the study site had not in advance booked a home caretaker. This was possibly because these women had not been informed about the need to do so by the midwives during

antenatal care. This meant that in case an emergency occurred, such women would waste significant time at home looking for someone to keep home instead of being rushed to the health facility [9].

Overall, only about a quarter of participants in this study were prepared for birth. Shockingly, this meant that majority of the participants could not have responded swiftly in case obstetric emergencies rose. These study findings did not digress significantly from other studies elsewhere. A study in India [10], Nigeria [8], Kenya [2] and Uganda [5] indicated the overall magnitude of birth preparedness of 47.7%, 27.5%, 15.0% and 35% respectively.

CONCLUSION AND RECOMMENDATIONS

We observed that most of the pregnant women at Kagadi hospital, in western were not prepared for childbirth. We found that nearly all pregnant women saved some money to meet childbirth expenses. This meant that they had positive attitude towards BP and new the reason for doing so. We also found that majority of men did not escort their spouses during labour. To scale up birth preparedness in rural settings, we recommend that providers of antenatal care services should intensify on assisting pregnant women and their spouses to draw and continuously review birth plans before onset of labour. We further recommend that birth plan should focus on the five elements as commended by the Uganda Ministry of Health.

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