Maternal factors that influence Birth Preparedness and complication readiness among women attending antenatal clinic at Mbagathi County Hospital, Nairobi Kenya.

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Abstract

Introduction: Birth Preparedness/ Complication Readiness (BP/CR) involves making early birth preparations in order to improve maternal health outcomes. This involves participation of family and community members. This study aimed at identifying the maternal factors that influence birth preparedness and complication readiness among women aged 18-49 attending antenatal clinic (ANC) at Mbagathi County Hospital in Nairobi, Kenya.

Methods: Descriptive cross-sectional design involving qualitative and quantitative approaches of collecting data from 202 purposively sampled women at 32 weeks or more pregnant, aged 18-49 years, attending the ANC. The key informants were four nurses from maternity department. Semi structured questionnaires were used to collect data from women, interview guides for one focused group discussion.

Findings: Maternal factors were significantly associated with BP/CR. On parity, only 60% of the first-time mothers were considered to be prepared for child birth, while, 84.4 % of those who had delivered before were prepared for child birth OR 3.61; 95% CI 1.86-7.01 ($p < 0.001$). Higher number of ANC attendance yielded better preparation. Those who had attended the ANC 4 or more times were reported to be 3.16 times likely to be better prepared for birth than those who had paid less visits (OR=3.16, CI=95%, 1.22-8.16, x^2=16.8, p= 0.017). Those who had discussions with the health professionals about BP/CR were twice better prepared than those who had not (x^2=4.78, p = 0.03). The period of initial ANC attendance and the previous history of abortion did not influence birth preparedness.

Conclusion and recommendations: The maternal factors that had significant influence to BP/CR are, parity, number of ANC attendants, and discussions of BPCR, while those of no significance were the period of initiation of ANC attendance and history of previous abortion or still birth. During ANC Special attention should be given to those who are pregnant for the first time, all women should be encouraged to pay regular ANC clinics and more time should be used to discuss BP/CR.

Keywords: *Birth Preparedness, Complication readiness, Antenatal Care, Parity*

Introduction

Birth Preparedness/ Complication Readiness BP/CR is a program that help to ensure that women reach professional delivery care when labor begins, to reduce delays that occur when pregnant women in labor experience obstetric complications (Hailu, Gebremariam & Alemseged 2011). Through BP/CR, women are motivated to identify a skilled birth attendant during delivery, families are encouraged to take part in to ensure a successful delivery, and communities are encouraged to take part in the care of the

expectant woman. Asp *et al.,* 2014). BP/CR is a major strategy that can reduce the maternal mortality ratio (Hailu, *et al.,* 2011). The assumption by BP/RC concept is that knowledge of danger signs may result into reduction of the effects of pregnancy and complication that may accompany child birth due to better preparation. Women should therefore be empowered to enable them to make health care seeking decisions for routine or emergency services (Mbalinda *et al.,* 2014).

One of the ways of imparting knowledge on pregnant women by skilled health providers is through counseling during the ANC attendants. Providing information on birth preparation when pregnant women visit the ANC should be the point of emphasis in every health facility (Mukhopadhyay, Mukhopathay, Bhattacharjee, Nayak, Biswas, & Biswas, 2013).

The women's knowledge of birth preparation and signs of danger can be improved in order to enhance the use of skilled care services and increase the accessibility of professional services at child birth (Kakaire, Kaye, &Osinde 2011). The high maternal mortality rate in the country could be due to high prevalence of home deliveries (Botha, Alliet, Mercy & Kaye, 2013). The antenatal care visits results in pregnant women's increased awareness of the need to seek skilled birth attendants as indicated by a WHO proposed model (WHO, 2004).

There were indications that visiting ANC four times or more by pregnant women, had a positive influence on birth preparedness, according to the survey done in Tharaka-Nithi county, Kenya (Makunyi, 2014). The need to promote safe motherhood, therefore justifies the determination of the maternal factors that influence BP/CR whereby the skilled providers can mitigate complications.

Methods

The study was carried out using a cross-sectional descriptive design applying the qualitative and quantitative methods in determining the BP/CR among pregnant women at Mbagathi Hospital in Nairobi County. The study was carried on the period from in May 2016. It was estimated that 350 pregnant women at 32 weeks gestation and above were attended to at the ANC every month. The sample size was 184, an addition of 10% contingency was made for non-response rate, which gave 202 as the sample size. An assumption was made of 95% as the level of confidence or 5% margin of error.

Pregnant women aged (18- 49) years old, at 32 or more weeks pregnant by gestation and were willing to participate were selected using consecutive sampling method. Expectant women who have been seeking antenatal services from other health care facilities, mothers on their first antenatal clinic visits, and sick women were excluded in the study.

Data were collected using researcher administered questionnaire adapted from the survey tools developed by JHPIEGO Maternal Neonatal Health program (2004). The data collectors were given training and pre-test was done at Pumwani Maternity Hospital.

Findings

Maternal characteristics

Parity

Considerably, parity showed a notable relation with birth preparedness and complication readiness. The table below shows that among the 202 ANC clients [80 (39.6%)] were first time mothers, 48 (60%) primigravidae clients were adequately prepared compared to 103 (84.4%) previously delivered mothers OR 3.61; 95% CI 1.86-7.01 ($p < 0.001$).

Table 1: Maternal factors and BP/CR of respondents

	Total		Birth preparedness		OR (95% CI)	P
			Yes	No		
	N	%	n (%)	n (%)		
Primigravida						
Yes	80	39.6	48(60.0)	32(40.0)	1.0(ref)	0.001
No	122	60.4	103(84.4)	19(15.6)	3.61(1.86-7.01)	
First ANC visits						
First trimester	64	31.7	45(70.3)	19(29.7)	1.0(ref)	0.797
Second trimester	106	52.5	81(76.4)	25(23.6)	1.37(0.68-2.75)	0.38
Third trimester	18	8.9	14(77.8)	4(22.2)	1.48(0.43-5.08)	0.535
Not stated	14	6.9	11(78.6)	3(21.4)	1.55(0.39-6.18)	0.536
Number of ANC visits						
Single visit	26	12.9	14(53.8)	12(46.2)	1.0(ref)	0.031
2-3 visits	101	50	78(77.2)	23(22.8)	2.91(1.18-7.15)	0.02
4 or more visits	75	37.1	59(78.7)	16(21.3)	3.16(1.22-8.16)	0.017
Ever had an abortion/ still birth						
No	163	80.7	121(74.2)	42(25.8)	1.00(1.00-1.00)	0.728
Yes	39	19.3	30(76.9)	9(23.1)	1.16(0.51-2.64)	

Initial ANC visits

Sixty-four (31.7%) initiated ANC visits during the first trimester, 106 (52.5%) initiated ANC attendance during the second trimester and 101 (50%) had made either two or three ANC visits.

There was no remarkable association reported between the initial ANC attendants, history of abortion or still birth and BP/CR (p = 0.38, and 0.728 respectively).

Number of ANC visits

ANC clients who had attended 2-3 visits were reported to be 2.91 times better prepared than those who had made a single ANC visit (p = 0.02) while those with 4 or more visits being 3.16 times more likely to report adequate childbirth preparedness and complication readiness (p = 0.017).

There was a significant association between birth preparedness and discussing with a healthcare professional about childbirth preparation (x^2=4.78, p = 0.03). The chance of being prepared was almost half lower (OR 0.48, CI=95%, 0.23-0.93) among mothers who had not discussed with a provider compared to those who had held discussions. The hearing of BP/CR or the knowledge of EDD did not influence birth preparedness or complication readiness, with p=0.358 and 0.617 respectively.

Table 2: Maternal knowledge and BP/CR for respondents

	Total		Birth preparedness		OR (95% CI)	chi square	P
			Yes	No			
	n	%	n (%)	n (%)			
Knowing EDD							
Yes	156	77.2	119(76.3)	37(23.7)	1.0(ref)		
No	46	22.8	32(69.6)	14(30.4)	0.71(0.34-1.47)	0.85	0.358
Ever heard of the term "birth preparedness"?							
Yes	174	86.1	129(74.1)	45(25.9)	1.0(ref)		
No	28	13.9	22(78.6)	6(21.4)	1.28(0.49-3.36)	0.25	0.617
Discussed about BP/CR							
Yes	94	46.5	77(81.9)	17(18.1)	1.0(ref)		
No	108	53.5	74(68.5)	34(31.5)	0.48(0.25-0.93)	4.78	0.029

Discussion

This study indicated that there was three times increase in the level of birth preparedness among the multiparous women attending ANC at Mbagathi Hospital. A study on BP/CR in Northern Ethiopia showed that women who had delivered more than four times and those who had delivered for the first time were less likely to be prepared for childbirth and its complication, than those who had delivered two to four times. The possible explanation for this is, women who have delivered more than four times may assume that the process would be as uneventful as the previous ones without complications and therefore see no reason to prepare, and those expecting their first babies may have had no experience hence lack of knowledge (Hiluf & Fantahun 2008).

Del Barco (2004) reported that knowledge of danger sings is influenced by higher parity and education. However, this is in contrast to studies done in central Tanzania and rural district of Ghana where first time mothers had made birth plans and were prepared for birth as compared to those who had multiple numbers of deliveries (Bintabara*et al.,* 2015, Kuganab-Lem*et al*., 2015).

This study demonstrated that frequency of ANC attendants is significantly associated with birth preparedness. Higher frequency of ANC attendants has a positive association with better birth preparedness. This report agrees with that of a study done in rural Uganda which reported that attending the ANC for a minimum of four times by pregnant women led to better birth preparation and its complications than those who did not (Kabakyenga *et al*., 2011).

Similarly, the results agreed with the results of BP/CR study conducted in North West Ethiopia where birth preparedness among the pregnant women who attended the ANC 2-3 times was better compared to those who had only attended once (Bitew, Alliet, Mercy and Kaye, 2016). The results suggested that visiting the ANC severally provides the pregnant woman a chance to learn to prepare (Kabakyenga*et al*., 2011). Regular and timely ANC visits are essential

for pregnant women to enable identification and reduction of pregnancy risks and the emphasis of birth preparedness and complication readiness. It also promotes the accessibility of skilled care services that may lead to reduction of delays as a measure of mitigating maternal mortality or morbidity (Gross , Alba, Schellenberg and Obrist2012). In order to improve health care seeking behaviour during the antenatal period, child birth, and puerperium, the time taken educating, advising, and counselling, pregnant women on health matters is very significant (Nikie'ma, Beninguisse, Haggerty 2009).

Counselling on BP/CR is required during all ANC visits, in the Kenyan Focused Antenatal Care guidelines (FANC) guidelines. In this study, only (46.5%) women confessed to have had discussions with the health professionals about child birth preparation). A key informant at the ANC stated that;

"*Only two midwives attend to the 35-45 antenatal attendants per day, and they spend at least 10 minutes with every client".*

Considering that the time spent is less than that which is required to discuss every topic of maternal health care and childbirth preparation in detail, it means that due to heavy workload, there is a challenge in provision of personalized maternal care. This corresponds with the study on High ANC coverage, and low skilled attendant in Rural Tanzanian district which, pointed that as a routine, only a few of the recommended topics were covered during health talks with the health care providers at the ANC (Magoma *et al*., 2010). Similarly, a study in Eastern Uganda revealed that the ANC care services delivery was below standards as more than half of the ANC attendants were unable to mention the danger signs of pregnancy (Kabakyenga *et al*., 2011).

In the Tanzanian rural district, a study revealed that ANC service providers did not allocate adequate counselling or health education time. Some of the attendants were not counselled at all, and this led to missing the opportunity to learn the importance of skilled care attendance at birth (Magoma *et al.*, 2010).

Some of the participants during the focused group discussion in this study stated that;

"*ANC counseling usually takes 5-15 minutes and child birth preparation is rarely discussed".*

Women who have never had a still birth are less likely to be prepared for childbirth and its complications than those who have had. This could be due to anticipation of serious complications by the women based on their previous experiences (Kabakyenga et al, 2012).

Conclusion

This study was conducted among pregnant women attending antenatal clinic at Mbagathi hospital to determine maternal factors that influence childbirth preparedness and complication readiness. The study identified parity, number of antenatal clinic attendants, and discussion of BP/CR with health care givers to have influence on birth preparedness and complication readiness. Knowledge of EDD, previous abortion or still birth did not influence birth preparedness and complication readiness.

Recommendation

Dissemination of BPCR information to the pregnant women should be increased during the Ante Natal Clinic visits and to have a written birth plan in order to promote safe motherhood. Pregnant women should be encouraged to attend the antenatal clinics as recommended by the WHO. Special

attention should be focused on those who are pregnant for the first time. The number of nurses should be increased to enable them to give quality discussion time with the clients.

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