Knowledge and practices on birth preparedness and complication readiness among antenatal mothers; A study from southern province

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Abstract

Background: Birth preparedness (BP) and complication readiness (CR) is a concept introduced by World Health Organization (WHO) for reduction of maternal and neonatal mortality rate of a country. This study was aimed to evaluate the level of knowledge and practices on BP and CR and associated factors among antenatal mothers attending antenatal clinic (ANC) of Teaching Hospital Mahamodara (THM).

Methods: A descriptive cross sectional study was conducted in THM,Galle, from 200 third trimester antenatal mothers who attended to ANC using pretested self-administered questionnaire from July 2016. It consisted with close ended questions in three sections; basic socio-demographic data, 47 facts about awareness of BP and CR and evaluation of practices of BP and CR based on WHO criteria. Data were analyzed using t-test, Chi-square test and logistic regression.

Results: Mean age of the study participants was 29 (+/-5.34). BP and CR were known concepts by 88.5% (95% CI: 84.08% to 92.92%) participants. Knowledge on BP and CR were reported as above average in 92.5% (95% CI: 88.85 to 96.15%) and 78.0% (95% CI: 72.26% to 83.74%) mothers respectively. Mothers who practiced BP and CR were 83.5% (95% CI: 78.36% to 88.64%). Young mothers have better knowledge on BP than older mothers (OR = 3.77; 95% CI: 1.16 to 12.24). Older mothers had statistically significant better knowledge on CR (OR = 0.73; 95% CI 0.66 to 0.93). There were statistically significant positive association of knowledge on CR with ethnicity (p = 0.03), family income (p = 0.04) and parity (p = 0.03). There was statistically significant positive association with better educational level (OR=0.31, 95% CI=0.11 to 0.91) and planned pregnancy (OR=0.26, 95% CI=0.10 to 0.70) with level of practice on BP and CR.

Conclusion: BP and CR were well-known concept among third trimester mothers. Level of knowledge and practices on BP and CR were satisfactory among the study sample. Women with higher maternal age had poor knowledge on BP. Women with better educational level and planned pregnancy had satisfactory practices on BP and CR.

Key words: Birth Preparedness, Complication Readiness Fifth Millennium Development Goal, Maternal Mortality Ratio

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INTRODUCTION

Pregnancy and childbirth are unique processes for women. So that women and families have different expectations regarding child bearing, based on their knowledge, experiences, believes, culture, social and family backgrounds. Sudden unpredictable complications can occur in pregnant women resulting significant morbidity and mortality to women and her newborn[1]. Globally, more than 40% of pregnant women may experience acute obstetric complications[2]. Of all maternal deaths, 99% occur in developing countries[3]. Everyday approximately 800 women die from preventable causes related to pregnancy and childbirth. The World Health Organization (WHO) estimated 300 million women are suffering from short term or long term illnesses that occur during pregnancy and labor. The fifth Millennium Development Goal (MDG5) calls for the reduction of Maternal Mortality Ratio (MMR) by 75% between 1990 and 2015. However, only about 45% declines have been achieved yet[4].

Majority of maternal deaths occur during labour, delivery or within 24 hours of post-partum period and neonatal deaths occur on the first day of life in the neonate[2,5]. WHO has recognized severe hemorrhage, infection, high blood pressure, unsafe abortion and obstructed labour as major causes for maternal morbidity and mortality[4]. In many countries, poor parental and familial understanding and religious and cultural believes delay the readiness for labour. They are not aware about the sequence of the labor process and taking actions after the onset of labour process. When the complications begin happened, every second is very important for the life of the mother and baby.

Thaddeus and Maine's Three-Delay Model[6] identifies 3 phases of delay in maternal emergency.

1. Delay in seeking care

2. Delay in reaching care

3. Delay in receiving adequate care when reaching a health facility.

But according to the annual report 2013 published by Family Health Bureau modified that 3 delay models in to Sri Lankan contexts. According to that, Delay 1 is non-using Ante Natal Clinic (ANC) /not practicing family planning services[7].

However delay in deciding to seek care may be caused by failure to recognize signs of complications, failure to perceive the severity of illness, cost considerations, previous negative experiences with health care system and transportation difficulties. Delay in reaching care may be caused by the distance from a women's home to the facility provider, the condition of roads and lack of emergency transportations[8].

However the delays have many causes including logistical and financial concerns, unsupportive policies, gap in services as well as inadequate community and family awareness and knowledge about maternal and newborn health issues.

Based on these, WHO introduced a new concept called Birth Preparedness and Complication Readiness (BP and CR). BP and CR is a process of planning for normal birth and anticipating actions that need in a maternal emergency, awareness of the danger signs, how to identify it and reducing delays in above 3 phases[9].

The concept of BP and CR includes many elements like utilizing antenatal health care facilities, knowing danger signs, presence of a skilled birth attendant and birth location, arranging transportation, identification of compatible blood donors and saving money in case of an obstetric complication[2,10]. So BP and CR is intervention designed to address

the delays by encouraging pregnant women, their families and communities to effectively plan for births and prepare for emergencies when they occur[11].

According to Sri Lankan statistics early booking (before 8 weeks) was increased by 20% over past seven years[7]. Ninety nine percent of deliveries occur in hospitals with experienced birth attendant[12]. So that they have good idea regarding skilled birth attendant and birth location.

MMR in low resource setting was 14 times higher than that of developed regions[13]. Substantial low rate of MMR in Sri Lanka is significant achievement over the last three decades. But still we have more room to achieve further reduction. This goal can be achieved partly by introducing the concept of BP and CR.

However less data are available on level of knowledge regarding BP and CR among mothers in Sri Lankan setting. Therefore, while keeping the eye on above aspects, this study was planned to assess awareness and practices on BP and CR during antenatal period among pregnant women and to study the socio-demographic factors affecting among the study subjects.

MATERIALS AND METHODS

A descriptive cross sectional study was carried out at Teaching Hospital Mahamodara. Consecutive 200 antenatal mothers had been recruited from three antenatal clinics over the period of three months from July 2016. Antenatal mothers who were in third trimester recruited for the study while pregnant mothers who had psychiatric illnesses and inability to read and write were excluded from the study. Convenient sampling method was used to obtain the data from mothers who were waiting antenatal care in antenatal clinics. Data were collected using pre-tested self-administered questionnaire. It consisted with close-ended questions in three sections. Section one was designed to

obtain basic socio-demographic data. Section two consisted of 47 facts about awareness of BP and CR. Section 3 was designed to evaluate the practices of BP and CR and consisted with 12 practices regarding BP and 04 practices regarding CR. The content of the questionnaire was based on WHO criteria on BP and CR. The questions assessing knowledge and practices were assigned scores and using a predetermined cut-off (60%). Antenatal mothers were categorized into below average and above average levels of overall knowledge. Overall practices was categorized as satisfactory and unsatisfactory based on the percentages of marks scored for 16 practices for BP and CR according to predetermined score. All statistical analyses were performed using the SPSS statistical package. Independent sample t-test was used to compare continuous variables and Chi-square test was performed to compare categorical variables in different groups. Logistic regression analyses were performed to detect the associations of knowledge with social demographic factors on BP and CR.

RESULTS

The study sample was predominantly Sinhalese, 97.5% (95% CI: 95.31% to 99.69%) and 96.0% (95% CI: 93.23% to 99.77%) were Buddhists. Mean age was 29 years and 59% (95% CI: 50.13 to 67.87%) (118) were in 21-30 age category. Among the study participants, 64.0% (95% CI: 55.68% to 72.32%) were studied up to O/L and 27.5% (95% CI: 15.91 to 39.09%) were studied up to A/L. The majority of mothers (84.5%) were housewives. Approximately half of the population (46%) earns 10,000 − 20,000 LKR per month. Almost half of women were primipara. Rate of planned pregnancies in the sample were 83.5% (167) (Table 1). More than 93.5% of pregnancy booking registration was done before 12th week of period of gestation.

Table 2 shows level of association of practices on BP and CR with different socio demographic characteristics. Better

educational level and mothers who had expected pregnancy had better practices on BP and CR. Regression analysis reviled the same findings (OR = 0.31; 95% CI 0.11 to 0.91 and OR = 0.26; 95% CI 0.10 to 0.70 respectively). Out of total, 88.5% (177) were known the concept of BP and CR and 92.5% (185) pregnant women had above average knowledge of BP. Rate of women who had above average knowledge about CR was 78.0% (156) (Table 2). Almost half of study population knew all the danger signs during pregnancy. Percentage of knowing all the danger signs during labour and childbirth was 43.5% (87). Among the study population 55.5% (111) were aware on all the danger signs during post-partum period.

Rate of attending ANC visits by mothers at least 5 or more were 68.5% (137). According to the results, 82.0% (164) pregnant women participated in antenatal sessions of birth preparation. Result indicates that 71.0% (142) pregnant mothers were satisfactorily prepared for childbirth.

Table 3 shows level of association of different socio demographic charac-teristics with knowledge on BP. Young mothers had better knowledge of BP than older mothers. Regression analysis reviled the same findings (OR = 3.77; 95% CI 1.16 – 12.24)

Table 4 shows level of association of different socio demographic charac-teristics with knowledge on CR. Older mothers had better knowledge of CR than younger mothers and there were significantly positive association of knowledge on CR with ethnicity, family income and parity. Regression analysis reviled same findings (OR = 3.77; 95% CI 1.16 – 12.24).

Table 1 – Socio demographic characteristics (n = 200)

Socio demographic factors	Sub groups	Frequency (%)	Mean	95% CI
Age Group	Less than 20 year	6.0%		
	21 – 30 years old	118 (59.0%)	28	50.13 to 67.87
	31 – 40 years old	67 (33.5%)		21.74 to 44.26
	More than 40 years old	3 (1.5%)		
Ethnicity	Sinhala	195 (97.5%)		95.31 to 99.69
	Tamil	3 (1.5%)		
	Moor	2 (1.0%)		
Religion	Buddhist	192 (96.0%)		93.23 to 98.77
	Christian	4 (2.0%)		
	Islamic	2 (1.0%)		
Educational level	Up to Grade 6	9 (4.5%)		
	≤ O/L	128 (64.0%)		55.68 to 72.32
	≤ A/L	55 (27.5%)		15.70 to 39.30
	Diploma or Degree	8 (4.0%)		
Current Pregnancy	Planned	167 (83.5%)		77.87 to 89.13
	Unplanned	33 (16.5%)		3.84 to 29.16
Parity	1	100 (50.0%)		40.20 to 59.80
	≥ 2	100 (50.0%)		40.20 to 59.80

Table 2 – Table of level of association of practices on BP and CR

Variable	Not Satisfactory Practice	Satisfactory Practice	P value
Educational (>O/L)	(18.2%)	57 (34.1%)	0.07
Family income (>20,000)	12 (36.4%)	49 (29.3.0%)	0.42
Occupation (Employed)	3 (9.1%)	28 (16.8%)	0.27
Parity (Multi)	20 (60.6%)	80 (47.9%)	0.18
Current Pregnancy (planned)	22 (66.7%)	145 (86.8%)	< 0.01

*t-test

Table 3 – Association of level of knowledge on BP (n = 200)

Variable	Below Average	Above Average	P value
Ethnicity (Sinhala)	181 (97.8%)	14 (93.3%)	0.28
Educational Level (>O/L)	2 (13.3%)	61 (33.0%)	0.12
Family income (>20,000)	2 (13.3%)	59 (31.9%)	0.13
Occupation (Employed)	2 (13.3%)	29 (15.7%)	0.81
Parity (Multi)	7 (46.7%)	93 (50.3%)	0.79
Current Pregnancy (planned)	12 (80.0%)	155 (83.8%)	0.70

*t-test

Table 4 – Association of level of knowledge on CR with selected socio demographic variables (n = 200)

Variable	Below Average	Above Average	P value
Age	27	29	0.03*
Ethnicity (Sinhala)	154 (98.7%)	41 (93.2%)	0.04
Educational Level (>O/L)	14 (31.8%)	49 (31.4%)	0.96
Family income (>20,000)	8 (18.2%)	53 (34.0%)	0.04
Occupation (Employed)	7 (15.9%)	24 (15.4%)	0.93
Parity (Multi)	16 (36.4%)	84 (53.8%)	0.04
Current Pregnancy (planned)	40 (90.9%)	127 (81.4%)	0.13

*t-test

DISCUSSION

BP and CR were well-known concept among third trimester mothers. Level of knowledge and practices on BP and CR were at a satisfactory level among the study sample. Mothers with better educational level and whom with planned pregnancy had better practices on BP and CR. Women with higher maternal age had poor knowledge on BP. There were significantly positive association of knowledge on CR with ethnicity, family income and parity.

Most of pregnant mothers knew the concept of BP and CR by health care workers. As this is a modern concept, knowing BP & CR is a good trend. This will reflect effectiveness of current antenatal educational program in the country.

Level of knowledge and practices on BP and CR were at a satisfactory level among the study sample. In this study, nearly half of the participants were aware of six danger signs of pregnancy. Out of the respondents, majority knew 3 or more danger signs can occur during labor and child birth, nearly half of them were aware all the danger signs of post-partum period. Similar findings were reported in a research conducted at Padukka in Sri Lanka. It was revealed that 60.2% of women had satisfactory knowledge on pregnancy, delivery and postpartum danger signs[14]. In contrast, research conducted in North Ethiopia revealed that 23.8% responded to at least one key danger sign, only 0.2% responded to all the four key danger signs during labour and child birth and 1.7% knew at least two key danger signs and 0.4% knew all the three key danger signs during post-partum period[2]. This improvement may be due to well-organized parent craft programs conducted in Sri Lanka. Although awareness on danger signs are satisfactory when compared with other countries, we must pay attention to improve the women's awareness for a safe pregnancy. Better knowledge on

danger signs results encouraging the women to reach the hospital immediately in an emergency. The unawareness of the women or the family about these danger signs could delay seeking health a facility. It may lead to serious health sequences for both mother and baby. Hence awareness on danger signs can reduce the delays in seeking care.

Other major finding of this study was, more than 95% of mothers had antenatal booking prior to 12 weeks. This is accordance with national findings.

68.5% had made at least 5 or more ANC visits. Compared with a study done in Padukka, participants of our study had good follow up care with more antenatal visits during pregnancy while their study shows 58.4% had made 5 or more ANC visits in that area[14]. The ANC visits will help in early identification of risk conditions.

Majority of the population had savings and made transport arrangements to reach hospital in emergency. Having arrangements to reach hospital immediately in an emergency help to reduce delay in reaching care. This may be due to the appropriate and planned grass root level family practice, which is carried out in Sri Lanka by Public Health Midwives (PHM). They follow up the women who are pregnant, and register them at their home for ANC.

According to the research conducted in Delhi, India, 48.9% had saved money for delivery, 44.1% women had also identified a mode of transportation for the delivery[2]. Compared to study in Delhi, current study findings showed better improvement in having saved money and planned transportation system for delivery in Sri Lankan setting. The reason for the above findings could be due to distribution of health information to the antenatal mothers through an organized communication system mainly by the community and hospitals.

CONCLUSIONS AND RECOMMENDATIONS

BP and CR were well-known concept among third trimester mothers. Level of knowledge and practices on BP and CR were at a satisfactory level among the study sample. Mothers with better educational level and with planned pregnancy had better practices on BP and CR. Women with higher maternal age had poor knowledge on BP. There were significantly positive association of knowledge on CR with ethnicity, family income and parity.

This will be guidance to policy makers and facility managers to develop their goals and strategies on further reduction of maternal and neonatal mortality rate in Sri Lanka.

ACKNOWLEDGEMENTS

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