BIRTH PREPAREDNESS AND COMPLICATION READINESS: A CROSS SECTIONAL SURVEY FROM EXPECTANT MOTHERS VISITING A RURAL HEALTH CENTER

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ABSTRACT

Objective: To assess level of awareness of expectant mothers about their birth preparedness and complication readiness (BPACR).

Study Design: Descriptive cross sectional study.

Place and Duration of Study: It was a descriptive cross sectional study conducted at a Rural Health Center, Mandra over period of six months, from Sep 2016 to Feb 2017.

Material and Methods: Three hundred and twenty pregnant women of rural area of residence in their third trimester (29-40 wks) were approached using non probability convenient sampling. They were interviewed by using a structured questionnaire after taking informed consent. SPSS version 20 was used for data entry and analysis. A *p*-value <0.05 was considered statistically significant.

Results: The mean age of the participants was 29.02 ± 6.403 years. All the 320 participants were from rural area of residence. The knowledge of elements of BPACR was highest (7 out of 8) in only 26 (8.1%) women followed by 6 elements in 47 (14.7%), 5 elements in 78 (24.4%), 4 elements in 83 (25.9%). There was significant number of females who had poor knowledge of only 3 elements 69 (21.6%). Overall 45% of pregnant women knew 5 or more elements were well prepared while 55% were less prepared regarding birth and related complications. Participants' education and husbands' monthly income was found to be significantly associated with birth preparedness and complication readiness knowledge (*p*-value<0.05).

Conclusion: The majority of expectant mothers were well prepared for the birth and were also aware of the danger signs of pregnancy. Antenatal visits were taken by majority of the participants. However arrangements for transportation, financial support and blood donor identification were not satisfactory.

Keywords: Antenatal, Awareness, Pregnancy complication.

INTRODUCTION

Maternal mortality has always remained a public health issue all over the world and is an important health burden in developing countries. The World Health Organization (WHO) has estimated that in developing countries 300 million women suffer from pregnancy and childbirth related short term or long term morbidities[1]. The burden due to maternal death is frightening; 289,000 maternal deaths occurred globally in 2013; Sub-Saharan Africa (SSA) 62%[2] and Southern Asia 29% account for 85% of global burden of maternal deaths[3]. In Pakistan according to Pakistan Demographic and Health Survey 2012-13 (PDHS 2012-13), Maternal Mortality Ratio (MMR) was 260 per 100,000 live births[4]. This rate of maternal mortality is higher in rural areas (23%) of Pakistan than urban areas (14%) as rural women are less likely to have access to a hospital. Home births are extremely common in rural areas. A total of 74%of women in rural areas give birth at home, compared to 43% of women in urban areas of Pakistan[4].

The MMR is more than 15 times higher in developing countries than in the developed regions of the world[5]. The Sustainable Development Goal (SDG-3 Target-1) calls for Maternal Mortality Ratio (MMR) to be reduced to less than 70 per 100,000 live births by 2030. However, in Eastern Asia, Northern Africa and Southern Asia there has been observed two third decline in maternal mortality but maternal mortality ratio in

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developing countries is still fourteen times higher than developed regions[6].

In addition to medical causes, there are many interlinked sociocultural factors which cause delay in care-seeking by the pregnant women and later contribute to maternal deaths. There are four types of recognized delays to care seeking. These are: (1) Delay in identifying the complication (2) Delay in decision making to seek care (3) Delay in identifying and then reaching the health facility (4) Delay in getting appropriate and adequate advice and treatment at the health facility[7].

If an expectant mothers prepares herself for birth, makes advance plan of delivery by a trained birth attendant and prepares to take quick action in case of any obstetric emergency, then these four delays can be addressed amicably[8].

Birth Preparedness and Complication Readiness (BPACR) is the process of planning for normal birth and precludes the actions that are required in any kind of emergency[9]. It makes use of different strategies that enable pregnant women to choose a health facility for her delivery, select a trained birth attendant, decide about someone to accompany her for delivery, had saved money for any kind of emergency and made arrangement of transport and a blood donor as well[10]. World Health Organization (WHO) in 2001 recognized the importance of BPACR in reducing maternal and neonatal deaths. Then WHO made BPACR intervention as a basic element of various antenatal programs[2].

BPACR also involves family of pregnant women, community and health staff of that health facility in getting ready for birth plan and delivery. On first antenatal visit birth plan should be discussed with each and every pregnant women, reviewed on later visits and should be finalized by 32 weeks of gestational period[8].

Among various studies conducted for BPACR, 48.6% of pregnant women were aware of their expected date of delivery and 34.1% had identified a transport for any emergency[11], while 41.6% and 36.6% of pregnant women had identified a health facility and a skilled birth attendant respectively[9,3] Blood donor for any obstetric emergency was arranged by 13.8% had arranged for a blood donor for any obstetric emergency[12], 54.1% of females had saved money for delivery and any obstetric emergency[13]. Only 14.8% of pregnant women were aware of danger signs during pregnancy[10]. In another study 62.2% and 87.4% of pregnant women had prepared birth supplies for delivery and identified an accompanying person during an emergency respectively[14].

Pregnant females in rural areas have poor access to health facilities and they are at more risk of birth and birth related morbidities. This study focuses on birth preparedness and complication readiness in rural women and the social support system available at home. It will also help us in counseling on BPACR during antenatal care for better outcomes.

MATERIAL AND METHODS

It was a descriptive cross sectional study conducted at a Rural Health Center, Mandra over period of six months from Sep 2016 to Feb 2017. Using WHO sample size calculator with p=0.1412 sample size was computed to be 320 at 95% confidence interval and 5% permissible margin of error. Pregnant women in their third trimester (29-40 weeks) were interviewed using a structured questionnaire after informed consent. Pregnant women in labour and those whose husband are abroad were excluded from the study. The Questionnaire was developed after thorough literature search. Overall scoring of elements of BPACR enabled to categorize participants as well prepared regarding birth and complications with score ≥5 and less prepared with score <5. Non probability convenient sampling was used for data collection. The questionnaire was divided into three parts. In demographic part, participants' profile in aspects of education, occupation, family size, area of residence and family system was taken. In the second part, questions regarding birth preparedness like identifying a skilled birth

attendant; closest appropriate health care facility; funds for birth related and emergency expenses, identifying a transport to the health facility for the birth and obstetric emergency and identification of a compatible blood donor in case of emergency were asked. In the third part, knowledge regarding danger signs of pregnancy like headache, swelling of feet and ankles, pervaginal bleeding or leaking, decreased fetal movements, fits or convulsions was assessed.

Data were entered and analyzed using SPSS 20. Descriptive statistics in terms of frequency and percentages were used to describe qualitative variables like educational status, occupation and area of residence. Mean along with standard deviation was calculated for quantitative

Table-I: Demographic characteristics of participants (n=320).

Variable		Frequency (n)	Percentage (%)
Family system	Nuclear	36	11.2
	Joint	284	88.8
Husbands' monthly income	10000-15,000	185	57.8
	16000-20,000	122	38.1
	≥ 21000	13	4.1
Educational status of the participants	Illiterate	155	48.4
	Primary Education	62	19.4
	Middle Level Education	61	19.1
	Matriculation	31	9.7
	Intermediate level Education	8	2.5
	Bachelor's level Education	3	0.9
Occupation of respondents	Housewife	291	90.9
	Working	29	9.1
Parity	Primigravida	45	14.06
	3 or less alive issues	244	76.25
	4 or more alive issues	31	9.68

Table-II: Knowledge of the participants regarding various danger signs.

S No.	Danger signs	Frequency (n)	Percentage (%)
1	PV bleeding/ PV leaking	206	64.4
	Decreased fetal movements		
2	PV leaking/ PV bleeding	56	17.5
	Decreased fetal movements		
	Ankle or feet swelling		
3	PV leaking/ PV bleeding	41	12.8
	Decreased fetal movements		
	Fit sankle swelling		
4	Decreased fetal movements	10	3.1
5	PV leaking/ PV bleeding	6	1.9
	Decreased fetal movements		
	Ankle or feet swelling		
	Headache		
6	PV bleeding or PV leaking	1	0.3

variables. Mean score of knowledge about eight key elements of BPACR was computed. The association of family characteristics, pregnancy characteristics, and maternal education with knowledge of BPACR was determined by using chi square test of significance. A *p*-value <0.05 was considered significant.

RESULTS

The mean age of the participants was 29.02 ± 6.403 years. All the participants (320) were from rural area of residence. Table-I shows the demographic characteristics of the participants.

When the participants were inquired about number of antenatal checkups in present pregnancy, 161 (50.3%) had 2 antenatal visits, 85 (26.5%) had 3 antenatal visits while 74 (23.1%) had only one antenatal visit including this visit.

Out of total 29 working women, 17 (58.6%) were well prepared for their birth and had better knowledge regarding complications as compared to 127 (43.6%) housewives out of total 291 housewives.

On inquiring about elements of birth preparedness and complication readiness, majority 316 (98.8%) were aware of their expected date of delivery and 249 (77.8%) had even identified their place of delivery. When the participants were asked if they had identified a companion in case of emergency or for normal labour 243 (75.9%) said they had decided for it, 153 (47.8%) had even saved money for any kind of emergency (figure).

Mode of transportation at time of emergency or labour was identified by 87 (27.2%) of the participants while only 42 (13.1%) had arranged a bag containing items needed post delivery and items for newborn.

Blood donor for emergency needs was identified by few, 4 (1.25%) participants. Knowledge about danger signs of pregnancy was found in 318 (99.4%) participants. Detail about knowledge regarding danger signs is given in table-II.

The knowledge of elements of BPACR was highest (7 out of 8) in only 26 (8.1%) women

Table-III: Association of family characteristics & knowledge of BPACR.

Variables		BPACR Score		*p*-value
		BPACR <5	BPACR ≥5	
Mothers educational status	No formal education	137	80	*p*=0.001
	middle	29	32	
	matriculate	8	23	
	Intermediate or higher	2	9	
Husbands Monthly income (Rupees)	10,000-15,000	125	60	*p*=0.001
	16,000-20,000	44	78	
	21,000-25,000	7	6	
No of antenatal visits	One visit	56	18	*p*=0.001
	Two visits	94	67	
	Three visits	26	56	
	Four visits	0	3	
Family system	Nuclear	5	21	*p*=0.088
	joint	161	123	
Parity	≤ 2 alive issues	164	125	*p*=0.055
	≥ 3 alive issues	12	19	

followed by 6 elements in 47 (14.7%), 5 elements in 78 (24.4%), 4 elements in 83 (25.9%). There was significant number of females 69 (21.6%), who had poor knowledge of only 3 elements.

It was found that participants whose husband's have high income showed better BPACR with *p*-value=0.001. Participants with better education showed statistically significant results with *p*-value=0.001. Similarly no. of antenatal visits had a significant association with better BPACR scores with *p*=0.001. However family system and parity were not significantly associated to BPACR (*p*=0.088) and (*p*=0.05) respectively (table-III).

DISCUSSION

The current study showed that 45% of expectant mothers were well prepared for their birth and any kind of complications which is much higher than studies conducted in North West Ethiopia and Nigeria which reported only 24.1% and 24.3% pregnant females well prepared respectively[15,16]. This is because of Rural Health Centers are being equipped for better health coverage and provion of primary health care facilities.

In this study, 98.8% of the participants were aware of their expected date of delivery as compared to a study Nigeria in which only 45.5% were aware of it which is critical to their preparation for upcoming birth[16]. Again shows that even a single antenatal visit enables women to be aware of their expected date of delivery.

In this study 77.8% of respondents had identified a health facility for delivery which is much better to 4.3% in Nepali women which shows better preparedness and readiness regarding place of delivery. Mode of transportation in our study was identified by only 27.2% which is much less to 49.5% identified in Nepal[17] which shows lack of preparation regarding this important element of BPACR.

An important element of birth preparedness was saving money to bear out expenses of delivery which was adequately done by 47.8% of our respondents as compared to 31.50% of study participants in Indian rural women[18] Blood donor, as anticipation to any requirement or some previous history of transfusion requirement was identified by 1.2% of our respondents which was much less to 12.9%[19] in Indian women and 7.8% in Ethiopian respondents[20] which shows lack of preemptive approach in Pakistani women.

Knowledge about danger signs is instrumental in taking appropriate and timely decisions. In our study 99.4% of the respondents were aware of some kind of danger signs in pregnancy which is much better than 59% found in Ethiopia[21] which again shows better antenatal coverage and counseling by the health staff.

Amongst these, knowledge of key danger signs like vaginal bleeding, PV leaking and decreased fetal movements were identified by 64.4% of the participants which is higher as compared to a study in Tanzania in which only 47% females could recognize these danger signs correctly[10].

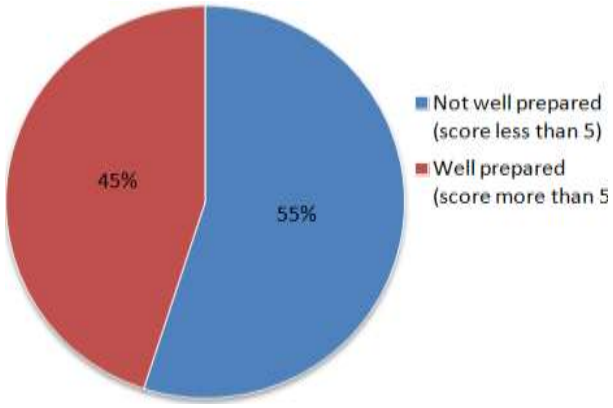

Figure: Birth preparedness and complication readiness scores.

This study showed statistically significant association between education of pregnant ladies and husband monthly income which is similar to a study conducted in Tanzania[10], Sudan[22] and other countries of the world[23].

CONCLUSION

The majority of the expectant mothers were well prepared for the birth and were also aware

of the danger signs of pregnancy. Antenatal visits were taken by majority of the participants. However arrangements for transportation, financial support and blood donor identification were not satisfactory.

RECOMMENDATION

Antenatal coverage during pregnancy is the important hall mark to achieve healthy outcome. Antenatal visits should be taken as an opportunity by the health staff to empower women of their health, timely decisions, plan and practice of BPACR. Male partner should be involved during antenatal visits. They should take the responsibility and commit to fulfill the needs of their wives in pregnancy, arrangement of transport facility and financial support.

Female education, income generating activities and female empowerment has the potential to bring about the desired change in socio-economic of our females population.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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