

Effectiveness of self-developed informational booklet regarding birth preparedness and complication readiness (BPCR) on knowledge of antenatal women and assessment of competencies of ASHAs regarding BPCR-A pilot study

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Abstract

Introduction: A healthy childbirth experience is absolutely vital for an antenatal woman, as it can greatly influence not only her health but also that of the newborn. Birth preparedness and complication readiness is an approach which significantly helps to increase the capacities of the woman, her partner, her family and also the health care providers to ensure appropriate care for a safe delivery.

Materials and Methods: One group pre-test post-test design was used to assess the effect of self-developed informational booklet regarding BPCR on knowledge of antenatal women whereas a cross-sectional study design was used for assessment of competencies of Accredited social health activists (ASHA).

Results: The mean post-test knowledge score (21.52) of antenatal women after administration of informational booklet regarding BPCR was significantly higher than their mean pre-test knowledge score (10.48) with t-calculated value of 22.307 (p value <0.001). Only 30% of the ASHAs were found to be competent in delivering BPCR.

Conclusion: The self-developed informational booklet regarding BPCR is significantly effective in increasing the knowledge of antenatal women. Further rounds of training of ASHAs regarding BPCR are essentially required to enhance their competencies.

Keywords: Informational booklet, Birth preparedness and complication readiness (BPCR), Accredited social health activist (ASHA).

Introduction

Giving birth to a life presents with a sense of joy and contentment to the woman, but yet it considerably influences her physical, physiological, psychological and social health. Having a positive and fruitful childbirth experience helps the woman to maintain a satisfying mother-newborn relationship.¹

Maternal mortality is a substantial burden our nation is trying to fight. According to WHO, UNICEF, UNFPA, World Bank Group, and United Nations Population Division the maternal mortality ratio of India in 2015 is 174 per 1,00,000 live births.² In absolute numbers, nearly 45,000 mothers die due to childbirth related causes every year that's about 17% of such deaths globally.² Seriously and effectively planning for a birth and preparing themselves for an emergency during childbirth is seldom on the agenda of families. Reason being that in country like India, pregnancy is rather regarded as an ordinary event which is socially constructed as it takes place within a cultural context and gets shaped by the perception and practices.³ When a pregnancy complication arises, the family is unprepared and while in a hasty attempt to handle the situation precious time is lost in most of the cases.⁴

BPCR is a safe motherhood approach which helps the expectant mothers & the family members to prepare to have a positive pregnancy outcome by seeking

quality healthcare services. According to the Integrated Management of Pregnancy and Childbirth (IMPAC) manual of WHO, birth preparedness would significantly increase the capacities of women, their partners and their families to remain healthy, to take appropriate steps to ensure a safe birth and to seek timely skilled care in emergencies.⁵ Also in the standards for maternal and neonatal care developed by the Department of Making Pregnancy Safer, WHO, a birth plan/emergency preparedness plan includes identification of the following elements: the desired place of birth; the preferred birth attendant; the location of the closest appropriate care facility; funds for birth-related and emergency expenses; a birth companion; support in looking after the home and children while the woman is away; transport to a health facility for the birth; transport in the case of an obstetric emergency; and identification of compatible blood donors in case of emergency.⁵

Along with significantly preparing the antenatal women and her family for childbirth, BPCR is also important for the health care providers as well. The knowledge and skills of health care providers are necessary to treat or stabilize or even refer a woman with complications. They are one among the pillars to reduce the likelihood of preventable complications by employing sound normal birth practices.

An Accredited social health activist (ASHA) is primarily a woman resident of the village, selected after

a rigorous process, and who is trained, deployed, and supported to function in her own village to improve the health status of the people through securing their access to healthcare services.⁶ Some of her job responsibilities include creating awareness on health and its social determinants among the general population, facilitating access to healthcare facilities, and acting as a depot holder for selected essential medicines.^{6,7} Health Workers like ASHA may not replace the need for sophisticated and quality health care delivery through highly skilled health care workers however they certainly play an important role in increasing access to health care and services, and thus, improving health outcomes as they are among the first point of contact with the antenatal woman.⁸

Materials and Methods

The study was done in two main stages after obtaining clearance from the institute's ethical committee. Stage-I included the evaluation of the effectiveness of self-developed informational booklet regarding BPCR on knowledge of 25 antenatal women by adopting a one group pre-test post-test design. And Stage-II included the assessment of competencies of 10 ASHAs regarding BPCR by adopting a descriptive cross-sectional study design.

Stage-I: In this stage, the antenatal women satisfying the inclusion and exclusion criteria were explained the about the study and those who gave informed, written, valid consent were included in the study. Either primigravida or multigravida women who were in first trimester of their singleton pregnancy were included in the study. Whereas those antenatal women who had conceived through assisted reproductive techniques, or were at a risk of developing any complications during pregnancy, or with any pre-existing disease condition were excluded from the study. The antenatal women attending antenatal outpatient department of selected hospitals of Anand district, Gujarat were recruited in the study. On day-1, after obtaining written valid consent from the participants, a detailed baseline information of the socio-demographic and obstetric variables of them were recorded in a predesigned proforma including age, religion, education, occupation, type of family, family income, area of residence, number of previous pregnancy, any previous exposure to childbirth preparation and history of any maternal/neonatal complications-miscarriage/abortion in previous pregnancy. The pre-intervention knowledge regarding BPCR was assessed using a pre-validated structured questionnaire followed by administration of the self-developed informational booklet regarding BPCR. Post-intervention assessment of knowledge was done after 7 days of the intervention using same questionnaire.

Stage-II: For data collection to be done in this stage, prior permission was obtained from the Chief District

Health Officer, Anand district, Gujarat and the Additional Director, Health, Gandhinagar, Gujarat. ASHAs of selected primary health centres of Anand district satisfying the inclusion and exclusion criteria were explained about the study and those who gave informed, written, valid consent were included in the study. Those working as ASHA for a minimum duration of six months at least were enrolled in the study. Baseline information of the socio-demographic variables of the ASHAs were obtained using a predesigned proforma including age, religion, marital status, education, duration of working as ASHA and rounds of training received. The researcher accompanied the participants during antenatal home visits and assessed their competency in delivering BPCR services to the antenatal women using a pre-validated checklist.

Statistical Analysis

Following descriptive and inferential statistics were used for analysing the collected data:

1. Frequency and percentage distribution of baseline data regarding socio-demographic and obstetric variables of Antenatal women and socio-demographic variables of ASHAs.
2. Mean and standard deviation of pre and post-intervention assessment of knowledge scores of Antenatal women and competency scores of ASHAs regarding BPCR.
3. Paired 't' test to find the difference between pre and post-intervention knowledge scores of Antenatal women regarding BPCR. Hence assessing the effectiveness of the intervention.
4. Chi-Square/Fishers Chi-Square test (as applicable) to determine association between competency of ASHAs regarding BPCR with selected variables.
5. A p value of < 0.05 was considered statistically significant in both stages.

Results and Discussion

Stage I: Analysis of data collected from Antenatal women.

The data in table no. 1 indicate the frequency and percentage distribution of antenatal women according to selected socio-demographic and obstetric variables. Apart from this, majority of the antenatal women 64% were housewives compared to 8% who were working in a medical related profession and 28% who were working in a non-medical related profession; 60% belonged to nuclear family compared to 40% who belonged to joint family. And 56% and 44% who resided in rural and urban areas respectively.

Table 1: Baseline data of antenatal women. (n=25)

S. No.	Variable	Frequency	Percentage
1.	Age:		
	a. 18- 21 years	6	24
	b. 22-25 years	6	24
	c. 26-29 years	7	28
	d. 30-33 years	4	16
	e. Above 33 years	2	8
2.	Educational status:		
	a. No formal education	2	8
	b. Primary education	6	24
	c. Secondary (higher) education	12	48
	d. Graduation &/or Post-graduation	5	20
3.	Number of previous pregnancy (including present):		
	a. 1	9	36
	b. 2	11	44
	c. 3	5	20
	d. > 3	0	0
4.	Any maternal/neonatal complications-miscarriage/abortion in previous pregnancy:		
	a. Yes	0	0
	b. No	16	64
	c. Not applicable	9	36

Fig. 1 depicts that after administration of self-developed informational booklet regarding BPCR the post-test knowledge scores of antenatal women was significantly higher than their pre-test knowledge scores.

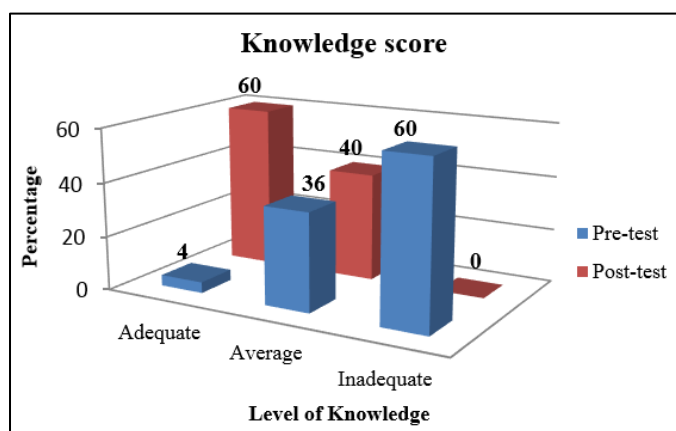


Fig. 1: Percentage distribution of pre-test and post-test knowledge scores of antenatal women regarding BPCR

The data in table 2 depicts that the mean post-test knowledge score of antenatal women regarding BPCR was significantly higher than their mean pre-test knowledge score and the 't' value was 22.307 at significance level of <0.001 which is statistically

extremely significant. Hence the research hypothesis that there is statistically significant difference between mean pre-test and post-test knowledge scores of antenatal women after administration of self-developed informational booklet regarding BPCR at 0.05 level of significance stands accepted.

Table 2: Mean and standard deviation of pre-test and post-test knowledge scores of antenatal women and Paired t-test score

Area of analysis	Paired differences			t	p value
	Mean	Standard Deviation	Standard Error mean		
Pre-test knowledge	10.48	4.45	0.909	22.307	<0.001
Post-test knowledge	21.52	4.55	0.889		

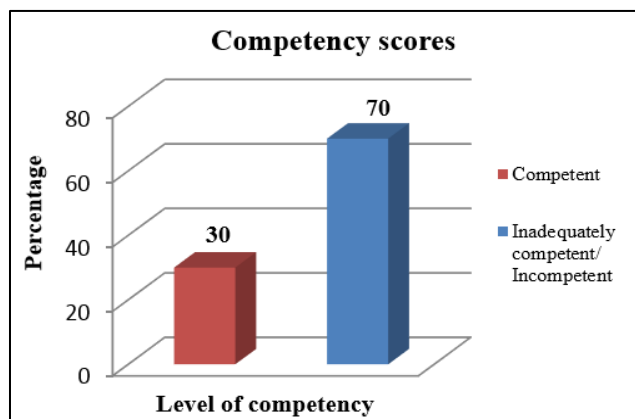
Stage II: Analysis of data collected from ASHA.

The data in table 3 indicate the frequency and percentage distribution of antenatal women according to selected socio-demographic and obstetric variables.

Apart from this, majority of the ASHA 90% were married compared to 10% who were widow; exactly 50% had completed education till tenth standard and remaining 50% were educated below tenth standard.

Table 3: Baseline data of ASHA (n=10)

S. No.	Variable	Frequency	Percentage
1.	Age:		
	a. < 30 years	3	30
	b. 30 - 39 years	5	50
	c. 40 - 49 years	2	20
	d. \geq 50 years	0	0
2.	Duration of working as ASHA		
	a. 6 - 12 months	2	20
	b. 13 - 24 months	2	20
	c. 25 - 36 months	4	40
	d. > 36 months	2	20
3.	Rounds of training received		
	1	2	20
	2	3	30
	3-4	3	30
	> 4	2	20

**Fig. 2: Percentage distribution of competency scores of ASHAs regarding BPCR**

Further analysis showed that the mean competency score of ASHAs regarding BPCR was calculated to be 19.7 with standard deviation of 2.162. 7 and 3 out of the selected 10 ASHAs were found to be incompetent/inadequately competent and competent in delivering BPCR services respectively (Fig. 2). The variable round of training regarding BPCR by ASHA was found to have statistically significant association with their competency score regarding the same with Fishers Chi-Square value as 7.462 for 3 degree of freedom and p value less than 0.05; whereas the other variables in relation with competency scores of ASHAs were found to be independent of each other (all p values >0.05).

Conclusion

BPCR is an extremely worthwhile and promising approach for the antenatal woman in preparing herself

to seek the appropriate care at the right time at the right place. From the present study it can be concluded that majority of the antenatal women lacked adequate knowledge regarding BPCR in the pre-test but administration of self-developed informational booklet regarding BPCR significantly increased their knowledge level. Hence the informational booklet can be considered as an easy method of creating awareness among the antenatal women and such methods should be encouraged to be used in regular practice as well. As far as the competency of ASHAs is concerned, it is suggested that further rounds of training regarding BPCR are required to enhance the efficacy of this approach in reducing the nation's maternal mortality ratio.

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