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Research Article

A CROSS-SECTIONAL STUDY TO ASSESS THE KNOWLEDGE OF SKILLED BIRTH ATTENDANTS IN INDORE DISTRICT OF MADHYA PRADESH

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ABSTRACT

Objective: The objective of the study is to assess the knowledge of skilled birth attendants (SBAs) in providing antenatal care, intranatal care, management of complications, and postnatal care.

Methods: A cross-sectional study was done at primary and secondary level of health-care delivery centers of Indore district in Madhya Pradesh. Health centers were selected by simple random sampling. SBA-trained health personnel were selected from the study health centers and their knowledge was assessed through pre-designed, semistructured questionnaire prepared from "Trainers manual for training of SBA" of MOHFW.

Result: A total of 80 trained SBAs were selected from the study health centers. Knowledge regarding postnatal care was highest (88.5%) followed by knowledge regarding antenatal care (86.8) and intranatal care (82.3%). Knowledge regarding the management of complications was lowest (75.8%). Overall, average % of knowledge regarding various subtopics among Medical Officer/AYUSH Medical Officer was 88.5%, followed by staff nurse (SN) was 85.5, lady health visitor (LHV) was 83.4%, and auxiliary nurse midwife (ANM) was 76.1%. Average % in the management of complications was lowest among LHVs (61.9%) and ANM (66.3%). A significant difference was observed between SNs and ANM with regard to intranatal care ($p=0.011$) and management of complications ($p<0.001$).

Conclusion: Knowledge of SBA was highest in postnatal care followed by antenatal and intranatal care and lowest in management of complications. Among the different categories of SBA, knowledge with regard to intranatal care and management of complications was better in SNs than ANMs.

Keywords: Skilled birth attendants, Knowledge, Antenatal care.

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INTRODUCTION

The estimates of the present decade show that worldwide, each year nearly half a million women die from complications during pregnancy and childbirth. The current maternal mortality ratio (MMR) in India is 167/100,000 live births [1].

The tragedy is that these deaths are largely preventable. Skilled attendance at birth can make a difference between life and death for a mother and her newborn [2]. Therefore, the Government of India has a commitment under NRHM to ensure universal coverage of all births in the presence of skilled persons both at the institution and at the community level.

Accordingly, necessary policy decisions were taken for empowering auxiliary nurse midwife/lady health visitors (ANMs/LHVs) and staff nurse (SNs) for handling basic obstetric care and common complications including essential newborn care and resuscitation services. Pre-service and in-service training for these paramedical workers has been initiated since 2006–2007 and is being also implemented in Madhya Pradesh to make birth attendants proficient in the provision of care during pregnancy and childbirth.

Birth attended by doctor/nurse/LHV/ANM skilled birth attendants (SBAs) has increased from 32.7% in the year 2005–2006 (NFHS-3) to 78.1% in 2015–2016 (NFHS-4) [3], but Madhya Pradesh has been identified as a high focus state under NRHM with maternal mortality rate (MMR) 269 in SRS 2007–09 [4], 230 in SRS 2010–12 [5], and 221 in SRS 2011–2013, while infant mortality rate (IMR) was 54 (SRS 2013) [6], which are higher in comparison to other states and national MMR and IMR average.

These facts highlight that the number of institutional deliveries and births assisted by SBAs increased markedly but MMR did not fall as it was expected. These points question toward the proficiency and competency of SBAs that are providing skilled services in health centers.

Hence, this study is an attempt to assess the knowledge of SBAs in providing antenatal care, intranatal care, management of complications, and postnatal care.

METHODS

This cross-sectional study was done for a period of 3 months in the selected health centers of Indore district of Madhya Pradesh, chosen by simple random sampling. A total of 80 SBAs who have undergone SBA training were selected from these health centers to assess their knowledge and attitude in terms of antenatal care, intranatal care, management of complications, and postnatal care. After obtaining verbal consent from all the study participants, SBAs were divided into 4 cadres – Medical Officer/AYUSH Medical Officer (MO/AMO), SN, Female Health Assistant/Lady Health Visitor (FHA/LHV), and Female Health Worker/Auxiliary Nurse Midwife (FHW/ANM). Pre-designed, semi-structured questionnaire prepared from the "Trainer's Manual for training for SBA 2010 by the Ministry of Health and Family Welfare, Government of India [7]" and were given to the SBAs to assess their knowledge.

Ethical committee approval

Approval from the institutional ethical committee was taken before conducting the study.

Data analysis

Data were entered in Microsoft Office Excel worksheets. Then, data were analyzed using Microsoft Office Excel 2007 and online Epi-Info software. Continuous data were expressed in terms of mean and standard deviation. Categorical data were expressed in terms of proportion. $p<0.05$ ($p<0.05$) was considered significant.

Table 1: Designation-wise distribution of trained SBAs in different study health centers (n=80)

SBA categories	DH*	UHC*	CHC*	PHC*	SHC*	Total	Percentage
MO/AMO**	3	4	3	4	0	14	17.50
SN	19	6	7	3	0	35	43.75
FHA/LHV	1	1	0	1	0	3	03.75
FHW/ANM	2	1	6	7	12	28	35.00
Total	25	12	16	15	12	80	100

*DH: District hospital, UHC: Urban health center, CHC: Community health center, PHC: Primary health center. **Out of 14 MO: Medical officers, 5 were AMO: AYUSH MO. SBA: Skilled birth attendants, SNs: Staff nurses, FHAs: Female health assistants; LHV: Lady health visitor; FHWs: Female Health Workers; ANM: Auxiliary nurse midwife

Table 2: Assessment of knowledge regarding care given during pregnancy and delivery among SBAs

S. No.	Assessment of Knowledge regarding	Average % scored by SBA				
		MO n=14	SN n=35	LHV n=3	ANM n=28	Total n=80
1.	Antenatal care (maximum score=14)	89.7	87.9	89.9	79.5	86.8
2.	Intranatal care (maximum score=8)	83.9	79.2	92.8	73.2	82.3
3.	Management of complications (maximum score=7)	89.9	85.3	61.9	66.3	75.8
4.	Postnatal care (maximum score=9)	90.4	89.5	88.8	85.3	88.5
	Average %	88.5	85.5	83.4	76.1	83.4

SBA: Skilled birth attendants, MO: Medical officers, SN: Staff nurses, LHV: Lady health visitor, ANM: Auxiliary nurse midwife

Scoring

For scoring purpose of SBA, questionnaire was divided into four sections: ANC, INC, management of complications, and PNC. For each correct answer "1" mark and for incorrect response "0" was given. Maximum score in ANC section was 14, INC=8, Complications=9, PNC=7. For the calculation of average percentage score, marks obtained by each respondent were summed up in various subtopics and average was calculated and then converted into percentage.

RESULTS

In the present study, a total of 80 SBA were included, out of which 14 were MOs/AMO, 35 were SNs, 3 were FHA/LHV, and 28 were FHW/ANM (Table 1). The overall average percentage of knowledge among SBA was 83.4%. Overall, knowledge regarding postnatal care was highest (88.5%) followed by knowledge regarding antenatal care (86.8%) and intranatal care (82.3%). Knowledge regarding the management of complications was lowest (75.8%) (Table 2).

Overall, average % of knowledge regarding various subtopics among MO was 88.5%, followed by SN 85.5%, LHV 83.4%, and ANM 76.1%. Average % in management of complications was lowest among LHVs (61.9%) and ANM (66.3%) (Table 2).

DISCUSSION

Competent management of uncomplicated and complicated deliveries in the health-care facilities by the SBAs is essential to bring down MMR. Therefore, in this study, the knowledge and attitude of SBAs were assessed.

The overall average percentage of knowledge among SBA was 83.4% which was better than the findings of study done by Bali and Reddy [8] in 2015 in Madhya Pradesh, where average percentage of knowledge among SBA was only 75.4% and almost similar to the result of another study conducted by Karnataka State Health System Resource Center [9] in 2012 in Karnataka, in which average percentage of knowledge among SBAs was found to be 82%.

In the present study, the average percentage score with regard to knowledge regarding antenatal care was 86.8% among SBAs which was better than the findings of study done in Madhya Pradesh and Karnataka, in which ANC score was 77.3% and 72.07%, respectively. The average percentage score with regard to intranatal care was 82.3% in this study which was better than the average score of 70.2% in a study done in Madhya Pradesh but lower than the findings in the study done in Karnataka (86.87%). In this study, SBA scored lowest (75.8%) in the subtopic of management of complications which was almost similar to Madhya Pradesh and Karnataka report [8,9] in which score was 74.7% and 76.4%, respectively. In the present study, average score of SBA in subtopic of postnatal care was highest (88.5%) which was better than the findings of Madhya Pradesh and Karnataka in which the scores were 77.1% and 86.57%, respectively.

In the present study, the average percentage of knowledge score among MO, SN, and FHW/ANM was 88.5%, 85.5%, and 76.10%, respectively, which was better than the findings of the study done by Harvey *et al*. [10] in four different countries from Latin America and Africa in 2007, in which the overall competency score among doctors, professional nurses, and auxiliary nurses was found to be only 72%, 57%, and 51%, respectively. While in another study done by Partamin *et al*. [11] in 2012 in Afghanistan, it was found that doctors scored significantly higher than midwives in knowledge of symptoms of newborn infection and treatment for immediate complications.

The present study found a significant difference between knowledge with regard to intranatal care between SNs and ANM ($p = 0.011$) and with regard to the management of complications ($p < 0.001$). There was no significant difference observed between knowledge with regard to antenatal care and postnatal care between SNs, LHV, and ANM.

CONCLUSION

Knowledge of SBA was found lowest in intranatal care and management of complications. Among the different categories of SBA, knowledge with regard to intranatal care and management of complications was better in SNs than ANMs. Hence, there is a need of improving the competency of ANMs regarding intranatal care and management of complications by providing them on-the-job training and refresher courses and regular monitoring of their performance by the necessary authority. Improvement of communication between doctors and other SBAs (SN, LHV, and ANM) will encourage SBAs working at PHCs and subhealth centers (field/periphery) to seek guidance and ensure timely referral of complicated cases.

LIMITATION

Sample size is small to generalize the findings. More sample size is required which was not contemplated due to time constraints. MOs were also included in the study but they were assessed on the basis of questionnaire prepared from the guidelines for Antenatal Care and Skilled Attendance at Birth by ANMs/SNs and LHV.

CONFLICTS OF INTEREST

None.

SOURCE OF FUNDING

Nil.

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