

Knowledge and Skills of Ayurvedic and Homeopathic Practitioners to Provide Skilled Birth Attendance in India: An Observational Study

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Abstract

Background: To overcome the dearth of trained skilled birth attendants, mainstreaming of doctors from the alternative systems of medicine has been adopted by some states in India. **Objectives:** The objectives of the study were to explore the adequacy of knowledge and clinical skills of AYUSH practitioners (APs) (ayurvedic and homeopathic) engaged by the state governments to provide maternity care services, with a view to identify gaps if any, and to suggest measures for improvement. **Materials and Methods:** A cross-sectional observational study was conducted in three states of India (Maharashtra, Rajasthan, and Odisha). The APs were assessed for (a) knowledge of essential obstetric care and identification and management of complications of pregnancy and (b) clinical skills during provision of antenatal and postnatal care (PNC) and during the conduct of deliveries. Adequate knowledge or skill demonstration was defined as a score of 70% or more. **Results:** A total of 109 APs engaged in 37 peripheral level facilities were assessed. Nearly 76% of APs had adequate theoretical knowledge of essential obstetric care and identification and management of complications of pregnancy. Most APs demonstrated adequate skills while providing antenatal care but were deficient in taking past history and counseling pregnant women for danger signs during pregnancy and childbirth. APs in Maharashtra and Rajasthan had adequate skills for conducting vaginal deliveries but performed poorly in Odisha. Skills for resuscitation of newborn were deficient. Skills for providing PNC were adequate only among APs in Maharashtra. **Conclusion:** Through provision of appropriate in-service training and an enabling environment, APs may be a useful human resource for providing maternity care in the primary health-care settings in India.

Keywords: Ayurvedic and homeopathic practitioners, clinical skills, India, knowledge, skilled birth attendance

INTRODUCTION

India has achieved a significant decline in the maternal mortality ratio in the past two and half decades from 437/100,000 live births in 1990 to 130/100,000 live births in 2014–2016.^[1] Increasing institutional deliveries and improving interfacility referrals through the introduction of government-sponsored schemes such as Janani Suraksha Yojana and Janani Shishu Suraksha Karyakram have been the useful strategies. However, ensuring availability of skilled providers at birth in rural and remote areas is still a challenge in India. A total of 9389 vacant posts and shortfall of 3002 doctors in primary health centers (PHCs); 7881 vacant posts and shortfall of 17,525 specialists in community health centers (CHCs); and 11,757 vacant posts and shortfall of 12,953 nursing staffs in PHCs and

CHCs were reported during 2014–2015.^[2] The World Health Organization recently recommended task shifting to optimize health worker roles to improve access to key maternal and newborn health interventions stressing the need to develop a conducive regulatory environment and quality assurance mechanisms to ensure sustainability of these interventions.^[3] The National Rural Health Mission (NRHM) also initiated mainstreaming of doctors of the alternative systems to bridge

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the gaps in workforce at the primary health-care level. As health is a state subject, uptake of this mainstreaming is not uniform throughout the country.

The alternative systems of medicine include Ayurveda, Yoga, Unani, Siddha, and Homeopathy and are collectively referred to as acronym “AYUSH.” The Ayurveda and Homeopathic systems offer graduate degree equivalent in duration to that of the modern allopathic system. The alternative systems are well accepted in the Indian communities for treatment of common and chronic ailments. Recognizing their strength, state governments have employed AYUSH providers in public health dispensaries and outpatient clinics. Among nearly 771,468 AYUSH providers in India, majority are licensed Ayurveda (54.3%) and Homeopathic practitioners (38%).^[4] The undergraduate curricula of Ayurveda and Homeopathy systems impart knowledge about basic obstetrics and gynecology including the management of normal labor and reproductive health issues. Some state governments have trained Ayurveda and Homeopathy practitioners (AYUSH practitioners [Aps]) in Skilled birth attendance (SBA) and engaged them to provide support for essential and emergency obstetric care services in the primary health-care setting.

A mixed method study was carried out to evaluate the knowledge and clinical skills of APs (Ayurveda and Homeopathy) providing maternity care services and the work challenges they face in public health facilities. Results of the qualitative study indicated a need for skill enhancement and an enabling work environment as crucial factors for effective integration in the health system.^[5] This paper presents the results of the quantitative study wherein the specific objective was to assess the knowledge and clinical skills of APs providing maternity care services in peripheral facilities, with a view to identify their training needs and suggest measures for improvement.

MATERIALS AND METHODS

This cross-sectional observational study was carried out in 2011 in three states identified by the Ministry of Health and Family Welfare, Government of India, where APs were engaged by the state governments at primary and secondary health-care facilities. State health officials provided district-wise distribution of APs trained in SBA/Basic Emergency Obstetric Care (BEmOC). Two districts from each state, namely, Thane and Nashik (Maharashtra); Ajmer and Pali (Rajasthan); and Mayurbhanj and Dhenkanal (Odisha) were selected with a maximum number of trained APs. In each district, 5–6 health facilities including first referral units (FRUs), CHCs, and 24 × 7 PHCs with the highest number of deliveries conducted by APs in the last 3 months were purposively selected to allow the opportunity for on-site observation of clinical skills of the APs.

A project sensitization meeting was convened in each state with the state health and AYUSH Department by the Indian Council of Medical Research (ICMR). A trained medical

consultant with experience in public health, one for each state, coordinated the implementation of the study with state and district health officials. A multiple choice questionnaire was administered to the APs at the district headquarters by project consultants after obtaining informed consent. The questionnaire assessed knowledge of essential obstetric care (46 items) and identification and management of pregnancy complications (15 items). The participants were not allowed to consult each other or the textbooks for answering the questionnaire.

Clinical skills of the APs were observed on site by the project consultants (medical specialists with experience in public health) during field visits to the selected facilities in the district over a period of 7–10 days. The observed clinical skills included antenatal care (ANC), intranatal care (INC), postnatal care (PNC), and newborn care (NBC) and recorded on specially designed standardized checklist with 33, 30, and 45 items for ANC, INC, NBC, and PNC, respectively.

A scoring system was devised for evaluating the knowledge questionnaire and the observed clinical skills. A score of 70% or more was considered as adequate and there was no negative marking. The questionnaire and evaluation system were similar to those in the SBA training manual of Government of India,^[6] with a few additional items. Uniform data collection methods were employed across all the six study sites. The consultants evaluated the completed questionnaires using a predetermined procedure. The data were single entered in Excel sheets for each state. Descriptive statistics were used to analyze data using proportions and percentages.

The study was approved by the National Ethical Committee of ICMR. Written informed consent was also obtained from birthing women who were observed during the study.

RESULTS

A total of 37 facilities were sampled in the study (16 in Rajasthan, 11 in Maharashtra, and 10 in Odisha). APs were deployed at FRUs, CHCs, and PHCs in both Rajasthan and Odisha, but only at PHCs in Maharashtra. Table 1 describes the distribution of APs assessed for knowledge of essential obstetric care, identification, and management of pregnancy complications and clinical skills for providing ANC and PNC and conducting deliveries and NBC.

Nearly three-fourths (77.1%) of APs scored 70% or more on items related to essential obstetric care and emergency management of pregnancy complications. Region-wise variations in knowledge scores were seen. In Maharashtra, all APs had adequate knowledge (score >70%), while in Rajasthan and Odisha, 68% of APs scored >70%. Scores of <50% were obtained by nearly 22% APs in Odisha, but none in Maharashtra and Rajasthan. Adequate knowledge (score >70%) about identification and management of pregnancy complications and delivery was seen among 61.7% APs in Rajasthan, 63.3% in Maharashtra, and 53.1% in Odisha. Questions which were incorrectly answered by majority of participants included

management of bleeding in early pregnancy, duration of second stage of labor, components of active management of third stage of labor, harmful or ineffective neonatal resuscitation practices, and management of cracked nipples.

Table 2 describes the frequency of the various components of ANC, INC, and PNC practiced by the APs as observed by the project consultants. The APs paid special attention to cleanliness after delivery and early initiation of colostrum feeding.

DISCUSSION

A recent analysis conducted by the Global Health Workforce Alliance and WHO estimated a world over gap of 7.2 million professional health workers in 2012, set to rise to 12.9 million over the next decades.^[7] Many countries in Southeast Asia and Sub-Saharan Africa have adopted task shifting, especially in short-staffed rural settings to boost availability of providers and successfully provided interventions such as clean and safe delivery, BEmOC, and family planning counseling and services; however, its sustainable implementation requires

a sound policy and regulatory foundation, attention to qualifications and responsibilities, education and training, and service delivery support.^[8] This cross-sectional study was carried out in three states in India for an objective evaluation of the knowledge and clinical skills of the APs (Ayurvedic and Homeopathic) engaged in providing maternity care services. The study results could be utilized by state governments for making necessary changes for mainstreaming of APs in the provision of maternity care services.

The study showed that, on the whole, three out of four APs had adequate knowledge on essential obstetric care and emergency management of pregnancy complications. This was comparable to the knowledge assessment of skill birth attendants in Madhya Pradesh, wherein 75.4% of the test questions were responded correctly.^[9] There was variation in knowledge and skill competency scores, and APs in Maharashtra demonstrated better knowledge and skills than those in the states of Rajasthan and Odisha. Similar findings have been reported in a study carried out in three districts of Rajasthan where only 40% of APs responded correctly on signs of true labor pain, placental separation, and fetal distress.^[10]

Table 1: Distribution of sample size and parameters assessed

Parameter assessed	Method of assessment	Number of participants (APs)			
		Rajasthan	Maharashtra	Odisha	Total
Knowledge of essential obstetric care, pregnancy complication, and management	Multiple choice questions	47	30	32	109
Clinical skills (ANC, IPC, PNC, and NBC)	Observation of care provided	16	12	10	38

APs: Ayurvedic and Homeopathic practitioners, ANC: Antenatal care, INC: Intranatal care, PNC: Postnatal care, NBC: Newborn care

Table 2: Parameter wise frequency of components of antenatal, intranatal, and postnatal care practiced by Ayurvedic and Homeopathic practitioners during observation

Parameters	Rajasthan, n (%)	Maharashtra, n (%)	Odisha, n (%)
Number of antenatal cases examined	21	83	28
Antenatal history	21 (100)	81 (97.6)	7 (25)
Past history	0	1 (1.2)	0
Systemic examination	1 (4.8)	60 (72.0)	11 (39)
General examination	19 (90.5)	83 (100)	8 (29)
Abdominal examination	21 (100)	83 (100)	24 (86)
Advised investigations	21 (100)	78 (94)	17 (61)
Advice for injection TT and IFA tablets	21 (100)	83 (100)	2 (79)
Counseling for danger signs	13 (61.9)	37 (44.6)	3 (11)
Number of women in labor examined	3	4	2
Management of 1 st stage of labor including partograph plotting	3 (100)	3 (75)	1 (50)
Management of 2 nd stage of labor	3 (100)	4 (100)	0
Management of 3 rd stage of labor	2 (66.7)	3 (75)	1 (50)
Essential care of newborn	1 (33.3)	4 (100)	1 (50)
Resuscitation on newborn	Not required	Not required	1 (50)
Number of postnatal cases examined	16	32	18
History taking mother	4 (25)	25 (78.0)	11 (61)
Postpartum examination	9 (56.3)	30 (94.0)	0
History taking and examination of baby	3 (18.8)	28 (87.0)	0
Counseling given on newborn care	10 (62.5)	31 (97.0)	0
Counseling for danger signs of mother/baby	1 (6.3)	0 (0.0)	4 (22)

TT: Tetanus toxoid, IFA: Iron folic acid

Partograph plotting skills and correct identification for the need of referral based on the partograph findings was also found to be better among APs of Rajasthan and Maharashtra as compared to Odisha.^[11]

Acceptance of APs by allopathic providers was good in Maharashtra which may be attributed to a decade-long integration of APs in provision of maternity care services. In Odisha, APs were included to impart SBA services only 3 years before this study. Furthermore, they could not optimally utilize their newly learned SBA skills as they were not allowed to conduct deliveries independently by the medical officers-in-charge of the health facilities.^[5] Resistance from existing staff and peers in mainstreaming of the AYUSH providers is a concern.^[12] APs should be posted at delivery points to hone their skills and lack of opportunity to exercise the learned skills coupled with resistance from existing staff is a concern that needs urgent addressal. Supportive supervision, adequate hands-on training, and the absence of guidelines on their role in administering lifesaving allopathic treatment during emergencies were identified as major factors responsible for poor performance of APs in a study from Karnataka.^[13] Knowledge and skill gaps seen in APs in Odisha would, therefore, require innovative training, supervision, and monitoring strategies to develop their confidence and competence. Bajpai *et al.* opined that in Bangladesh, Kenya, and Nigeria, diversification of training strategies and inclusion of different cadres in SBA training had a measurable positive impact on the provision of maternal health care.^[14] An increase in access to services has been reported from a pilot program initiated to build capacity of MBBS physicians to provide CEmONC in Gujarat and Rajasthan States in 2006.^[8]

To the best of our knowledge, this is the first posttraining evaluation of the performance of APs trained in SBA services. This pilot study gives important clues toward existing opportunities and challenges in utilizing the trained practitioners of alternative systems as skilled birth attendants to bridge the existing workforce gap. The study results indicate that, through in-service training, APs could update their knowledge and skills and can be strategically positioned to facilitate a more effective delivery of maternal and newborn health services at the primary level.

CONCLUSION

This study provides preliminary evidence that majority of the APs had adequate knowledge and skills for providing care during pregnancy and delivery. They are a potentially useful human resource for providing maternity care services in the primary health-care settings. Preservice and in-service training, strategic deployment at delivery points, and providing an enabling environment can be explored to address the shortage of skilled birth attendants in the primary health-care system in India.

Study limitations

These include the purposive nature of sampling and a small

sample size. The participant APs comprised of a heterogeneous group with respect to type of training (SBA or BEMoC) and duration since training, thus limiting generalizability of the study results. This was mainly due to the fact that only facilities where the APs were actively engaged in providing delivery services were selected for the study to allow on-site observation. All the APs who participated in the knowledge test could not be evaluated for clinical skills due to the short duration of the study.

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Conflicts of interest

There are no conflicts of interest.

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