



General article

Dissociated reality *vis-a-vis* integrative planning of AYUSH in Maternal Health Program: A situational analysis in Jaleswar block of Balasore district of Odisha, India

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ARTICLE INFO

Article history:

Received 24 August 2015

Received in revised form

15 October 2015

Accepted 14 November 2015

Available online 20 July 2016

Keywords:

AYUSH

Maternal Health Program

National Rural Health Mission

Traditional medicine

Tribal health

ABSTRACT

Mainstreaming of AYUSH and revitalization of local health traditions is one of the innovative components of the National Rural Health Mission (NRHM) in the state of Odisha, India. In this study, an attempt was made to assess the potential of collocating AYUSH to improve maternal health services in tribal dominated Jaleswar block of the Balasore district. In addition, the study aimed at unearthing the underlying challenges and constraints in mainstreaming AYUSH and linking it with the Maternal Health Program.

Review of the policy documents and guidelines, both central and state government, was made to assess the implementation of AYUSH in Odisha. Primary data were collected through interviews with AYUSH doctors, district and block level health administrators, and tribal women.

The study revealed the inadequacy of basic amenities, infrastructure, drugs, and consumables in the health centers for integrating AYUSH in the delivery of maternal health services. Analysis of the job chart and work pattern of AYUSH doctors showed underutilization of their specialized knowledge to treat patients. Lack of continued medical education, standard operating procedures for treatment and spatial marginalization made suboptimal utilization of AYUSH services. This is unfortunate given the fact that such regions are economically underdeveloped and already have a distinct orientation toward indigenous health systems. AYUSH, on account of its holistic approach and proven cost-effectiveness, could be a viable option for improving maternal health in the region.

The study concluded that although there is huge scope for integrating AYUSH in Maternal Health Program under the ongoing NRHM, the full potential is yet to be exploited.

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1. Introduction

The Government of India has from time to time set up several committees – Bhole (1946), Mudaliar (1961), and Srivastava Committee (1975) for improvement of the health care system and has emphasized greater provision of Traditional Complementary and Alternative Medicine [1–3]. The National Health Policy (1983) suggested phased integration of indigenous medicine with biomedicine [4]. As a result of such concerted efforts, the

Department of Indian System of Medicine and Homeopathy (ISM&H) was established in 1995. Successive review of National Health Policy in 2002 put still greater emphasis on indigenous health systems, and the department was renamed as AYUSH in 2005 with new administrative structures and improved functioning. The same year, the National Rural Health Mission (NRHM) came up with strategies for mainstreaming AYUSH for the rural health sector [5–7]. Further, in 2014 the Government of India carved out a full-fledged ministry to stress on various components of AYUSH – medical education, quality control, drug standardization, research and development, and greater awareness of its potential, both within India and abroad [8].

In compliance with the Government of India guidelines and with technical and financial support from the Government of India,

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Peer review under responsibility of Transdisciplinary University, Bangalore.

the state of Odisha implemented AYUSH in both Primary Health and Community Health Centers (PHCs and CHCs). Many strategies were adopted by the state government to improve delivery of AYUSH services in rural areas. The state government also took steps to facilitate and improve the quality of laboratories, drug standardization procedures, research, and advocacy [9]. So far, it has successfully collocated 796 Homeopathy and 680 Ayurveda clinics in the PHCs and CHCs. Seventy-eight of these dispensaries are in Balasore district and have been commissioned in 2005 with an initial grant of INR 4,978,000 for improvement of rural health, particularly maternal health [10].

The improved focus on AYUSH by the state government is especially important in the context of prevailing poor health indicators in the state which has prompted the planning commission to consider it as one of the Empowered Action Group states. One-quarter of the population of Odisha consists of tribal community, who has historical inclination toward AYUSH system of medicine. In addition, it is one among the eighteen high focus states for program implementation of the government's NRHM, especially maternal health. The state has a high maternal mortality ratio (MMR) that hinders the realization of millennium development goal of reducing MMR to 119 by the end of the 11th plan period (2007–2012). Following the central government guidelines, the Odisha government has therefore made an attempt to provide an integrative treatment plan having plural medical choices for women [10]. Initially, it established one of the three systems of AYUSH medicine – Homeopathy, Ayurveda, and Unani in the CHCs, which are used as referral centers to the PHCs. Later, every PHC was equipped with at least one of the AYUSH systems of medicine. This provided a greater coverage and option of AYUSH services for the community. The collocation of AYUSH unit was driven by medical

plurality and revitalization of traditional therapies. In rural and tribal communities, the women found an opportunity to come across AYUSH system in a government facility which is very similar to local health traditions (LHT) and home remedies provided by local healers, *hakims*, and private practitioners. Unless emergency conditions arise, the tribal women were in the habit of using LHT and home remedy rather than biomedicines. This helps them to figure out AYUSH system of medicine perceiving less adverse effect with better accessibility. Existing health workers such as the Accredited Social Health Activists (ASHAs), Auxiliary Nurses and Midwives (ANMs), and Anganwadi Workers were thought to further improve the potential of AYUSH medicine.

Some districts in the state of Odisha such as Balasore have done fairly well in the Maternal Health Program. Unfortunately within these high performing districts, there are vulnerable tribal blocks which pose special challenges [11]. Jaleswar block is one such area in Balasore district of Odisha with a very high concentration of poor tribal population. Indigenous tribes – the *Santhal*, *Bhumija*, *Kolha*, and *Bhuiju* reside here. The block is one among the 46 Modified Area Development Approach pockets of Odisha where specialized development programs for tribal improvement are monitored by the Ministry of Tribal affairs [12]. The situation is also made difficult by the marked inaccessibility of this region due to its riverine geographical structure, and frequent floods interrupt the referral network to deliver optimal maternal care. Many of the health centers of Jaleswar were declared as “difficult” by the National Health Systems Resources Centre for such reasons [13]. Further, the tribal communities have marked dependence on ethnomedicine in comparison to modern biomedicine, making it difficult for the government to promote Western methods of maternal care.

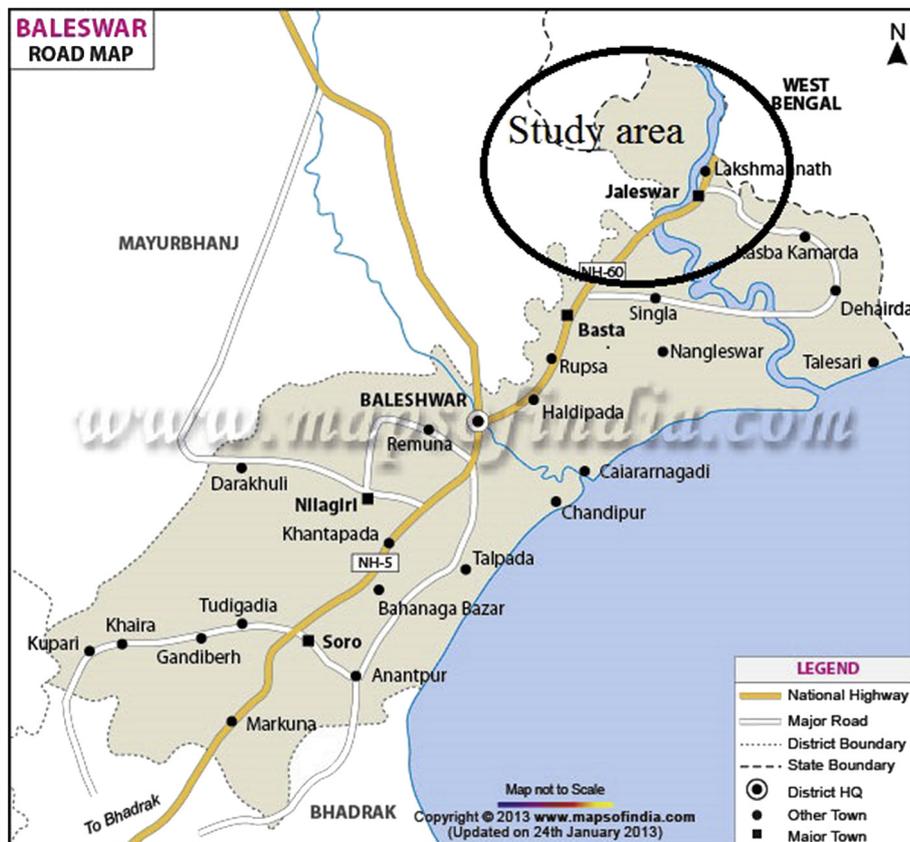


Fig. 1. Map of Jaleswar as study area.

The situation of maternal health in Jaleswar is abysmal. An analysis of HMIS data for the year 2014 shows that only 46.4% of the pregnant women were registered in the first trimester among the total ANC registrations. Whereas, early registration for pregnancy not only reflects good health seeking behavior but also facilitates better birth preparedness and detection of obstetric complications. One-fifth (21.4%) of the registered women do not receive iron and folic acid tablets to combat pregnancy-related anemia. According to the health administrators of Jaleswar, nearly 50% of the pregnant women in the block suffer from anemia. Among them, 10% have severe anemia and need an iron-sucrose intravenous transfusion. HMIS data also showed home deliveries are prevalent in the block unattended by skilled birth attendants, which make the women vulnerable to various infections, leading to high mortality and morbidity. Nearly 70% of the women are discharged from the hospital within 48 h of delivery due to the lack of hospital beds and necessary amenities, whereas, normative guidelines prescribe 48 h hospitalization, post-delivery, for postnatal care [14]. The locale of the study is shown in Fig. 1.

1.1. Objective of the study

The main objective of the study was to assess the potential of collocating AYUSH to improve the Maternal Health Program in the tribal dominated Jaleswar Block of the Balasore District in Odisha. It also aimed to unearth the underlying challenges in mainstreaming AYUSH with a view to suggest recommendations for improving maternal health.

2. Methods

A review of policy documents and guidelines of both the central and the state government are made to assess the implementation of AYUSH in Odisha at the vulnerable area. In addition to secondary data, primary data were collected through interviews of tribal women and AYUSH doctors, district and block health administrators such as District Program Manager, Block Program Manager, District Data Manager, and Medical Officer (In-Charge) having specialized knowledge for implementation of AYUSH to know the operational problems in its implementation.

3. Findings

3.1. Skewed deployment of AYUSH doctors

The initiative for strengthening AYUSH for improvement of Maternal Health Program was on principle well intended given the fact that the state has adequate provision for education and training

Table 2
Jaleswar Health Centers having AYUSH services.

Serial number	Name of the health center	Type of AYUSH services
1	PHC (New), Laxmananath	Ayurveda
2	PHC (New), Jaleswar	Homeopathy
3	PHC (New), Salbani	Homeopathy
4	PHC (New), Khard	Ayurveda
5	PHC (New), Sikharpur	Ayurveda
6	PHC (New), Paschimabad	Homeopathy
7	PHC (New), Olamara	Ayurveda
8	PHC (New), Jamalpur	Ayurveda
9	PHC (New), Chhamauza	Homeopathy
10	PHC (New), Nampo	Homeopathy
11	CHC, Hatigarh	Homeopathy

Source: NRHM Odisha (2015). AYUSH = Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homeopathy, PHC = Primary Health Center, CHC = Community Health Center, NRHM = National Rural Health Mission.

of AYUSH professionals at both undergraduate and postgraduate levels. There is a facility for training of 180 and 160 undergraduate doctors in Ayurveda and Homeopathy, respectively, in an academic year. Further, training for 15 Ayurveda and Homeopathy doctors each at postgraduate level is available in AYUSH medical colleges of Odisha [15]. Many rural and inaccessible places of Odisha are already served by AYUSH dispensaries owned by Odisha government. Currently, there are 624 Ayurveda, 537 Homeopathy, and 9 Unani dispensaries in the State [15]. Further, there are 4458 Ayurveda and 3835 Homeopathy doctors working in government and private organizations and on self-employment basis in the state. The government appointed AYUSH doctors having a minimum of undergraduate degree which may be: Bachelor of Ayurvedic Medicine and Surgery, Bachelor of Homeopathic Medicine and Surgery, and Bachelor of Unani Medicine and Surgery as mandatory qualifications. Further, a quarter of them recruited under NRHM have a postgraduate degree in their respective specialization. Details of AYUSH infrastructure and manpower in Odisha are provided in Table 1 [15]. The number of AYUSH health centers in Jaleswar are listed in Table 2 [16].

The women requiring referral services in Homeopathy mostly relied on the Medical College Hospital for further consultation. In case of Ayurveda referrals, the patients are referred to nearest Ayurveda hospital of Odisha government, which is functioning directly under the aegis of Department of ISM&H. Moreover, the logic of collocating Ayurveda or Homeopathy units in PHCs and CHCs under NRHM is derived from the existence of Ayurveda or Homeopathy hospitals under the Department of ISM&H in that particular locality. If there was the existence of Ayurveda hospital nearest to the PHC, then a Homeopathy unit was recommended for the PHC and *vice versa*. However, in actual, the referral network is not kept intact and most of the pregnant women have to take the help of biomedicines. According to AYUSH operational guidelines,

Table 1
Existing AYUSH infrastructure and educational institutions in Odisha.

System of medicine	Hospitals	Beds	Dispensaries	Licensed pharmacies	Registered practitioners	Educational facilities			
						Undergraduate colleges		Postgraduate colleges	
						Numbers	Admission capacity	Numbers	Admission capacity
Ayurveda	8	718	624	148	4448	6	180	1	15
Unani	0	ND	9	ND	17	ND	ND	ND	ND
Siddha	ND	ND	ND	ND	ND	ND	ND	ND	ND
Yoga	ND	ND	35	ND	ND	ND	ND	ND	ND
Naturopathy	0	0	30	ND	ND	ND	ND	ND	ND
Homeopathy	6	185	637	12	3835	6	160	1	15
Sowa-Rigpa	ND	ND	2	ND	ND	ND	ND	ND	ND
Total	14	903	1337	160	8300	12	340	2	30

ND = No data.

Source: Department of AYUSH, Ministry of Health and Family Welfare Government of India (2014). AYUSH = Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homeopathy.

there should be AYUSH OPD clinics at PHC, AYUSH IPD at CHC, and full-fledged AYUSH wing with specialty care at District Head Quarter Hospital.

Despite the elaborate infrastructure outlined above, the contribution of AYUSH to Maternal and Child Health (MCH) programs, in Odisha and in Jaleswar block in particular, has been less than optimal. Field data highlighted some of the limitations arising due to preconceived biases against AYUSH *vis-a-vis* biomedicine. This is well-illustrated in the skewed appointment of AYUSH physicians in different tiers of health delivery system. Presently, most are posted at the lowest administrative health tier – at PHCs and CHCs. While two allopathic doctors are employed at PHC, only one AYUSH doctor remains in charge. The number of allopathic doctor increases to four at CHC level, but the corresponding number of appointed AYUSH doctors remains static at one only. In other words, there is no increase in deployment of AYUSH manpower at higher referral levels. This is unfortunately given the fact that disease-specific interventions are charted out at a higher level, thereby compromising specialized AYUSH inputs to health delivery system.

3.2. Cumbersome job chart of AYUSH doctors

In addition to the skewed deployment of AYUSH personnel, it was seen during field work that they were mostly engaged in IEC activities related to key events such as *Pustikar Diwas*, *Mamata Diwas*, and Village Health and Nutrition Day. These involve extensive traveling and supervisory skills which consume time and energy, leaving little scope for specialized AYUSH services at dispensary. AYUSH doctors are supposed to supervise ongoing public health programs for a minimum of 12–16 days per month. Moreover, since these engagements are well supported by government incentive schemes, there is a little motivation to focus on specialized AYUSH activities related to diagnosis and cure. This adversely affects specialized AYUSH services in the block. AYUSH doctors also engage themselves in jobs which could otherwise be well-supervised by Block Extension Educators and Lady Health Workers. Very often woman in need of emergency care complains of not finding AYUSH doctors in their dispensaries due to latter's preoccupation in off-site activities. An AYUSH doctor (Homeopathy specialization) detailed how discontinuity adversely affects the performance:

“Pregnant women are prescribed homeopathic medicines after proper case analysis. But, due to field supervision, I am unable to monitor and follow-up patients' treatment. Complementary doses, proper substitutes, and antidotes under conditions of homeopathic aggravations are especially difficult to administer. This seriously impedes the progress of AYUSH services delivery which relies heavily on repeat visits and customized interventions. There is also a dearth of pharmacists and other paramedic staffs which undoubtedly affects efficient delivery of AYUSH services. As a result, there are many patients who drop off the treatment plan.”

3.3. Contractual appointments and insufficient remunerations

Contractual appointments have also seriously impacted the motivation levels of the AYUSH doctors, predisposing them to services, which fetch merely incentives rather than job satisfaction. The Planning Commission had recommended provision of contractual recruitment, training, and involvement of human resources for Program Implementation Plans [17]. These recommendations have been adopted by the Government of Odisha in the

year 2008–2009 for AYUSH services. However, a piecemeal implementation of the recommendations has ensued with no financial provisions made in the state during the said period, with the result that the doctors interviewed were dissatisfied with the existing salary and delay in receiving the same. This indirectly compelled them to involve themselves in incentive programs (mentioned earlier) and private practice, thereby, seriously impacting the government's Maternal Health Program. In Jaleswar, there are 11 AYUSH physicians appointed on contractual terms, most of them working for more than 6 years of service without any further scope for regularization of services. On the other hand, biomedical physicians working in PHCs and CHCs enjoy permanent status under the Government of Odisha as “Group A” employees. If due to unavailability of biomedical physicians, the posts remain vacant; contractual personnel are appointed till their replacement by permanent doctors by the Government of Odisha. They are well-remunerated and entrusted with clinical activities at PHC or CHC unlike their AYUSH counterpart who are primarily engaged in public health activities. It may be noted that initially NRHM worked in a mission mode during 2005–2012 with almost 75% funding from the Government of India and 25% matching share from the Government of Odisha toward manpower costs. The mission document proposes the state governments to arrange the expenses of necessary manpower and infrastructure after the said period. The Government of Odisha could regularize the staffs for providing improved services. In principle, Government of Odisha adopted a policy to regularize staffs in various departments after rendering 6 years of contractual services. In health department also, various categories of service staff such as pharmacists, staff nurses, and technicians (working under ENT, eye, OT, laboratory) were regularized after 6 years of contractual services by creating new posts. However, this policy was not adopted in the case of AYUSH doctors, showing the discriminative attitude of government toward AYUSH doctors.

3.4. Lack of continuing medical education for AYUSH doctors

Updating knowledge and practice is a prerequisite for efficient functioning of any system of medicine. While continuing medical education (CME) conducted at District Head Quarters Hospital, Balasore, considerably help Allopathic doctors, AYUSH doctors do not have such opportunities for knowledge sharing despite having played an important role in maternal health services since 2008. The interviews reveal an inter-district sharing of clinical knowledge, health information, and challenges could have paved the way for improvement in the field. The AYUSH physicians interviewed in Jaleswar block opines that despite more than 6 years of services under NRHM there is no CME program for the update of professional knowledge. The need for upgradation and information sharing for critical case management has also been corroborated by a study of the Planning Commission for AYUSH doctors [17].

3.5. Lack of standard guidelines and protocols for treatment

The AYUSH system is not supported by the Standard Treatment Guidelines (STGs) for commonly occurring diseases during pregnancy. For instance, AYUSH Medical Officers in Jaleswar were found to adopt multiple treatment modalities for single disease condition, thereby violating some of the best practice procedures in AYUSH system. Many doctors complained of a lack of standard protocols for maternal health, particularly for tribal women. An AYUSH doctor (Ayurveda specialization) recounts:

“There was a case of a women with severe hypertension who came to the hospital when the allopathic unit was closed. I hesitantly prescribed a dose and kept her under observation. Meanwhile, I consulted a senior AYUSH physician and on his suggestion modified my present line of treatment. This yielded good results and I continued this treatment plan for similar cases. A scientifically well documented STG would be helpful for colleagues who don't have guidance of such senior physicians.”

3.6. Underplaying the potential of AYUSH medicines in maternal health

The overall association of AYUSH with public health (rather than clinical) interventions has seriously underplayed its specialized potential in maternal health. As an illustration, the role of Homeopathy in the treatment of gynecological problems and pregnancy-related complications in maternal health has not been explored well in the ongoing MCH program, despite the fact that available literature has good documentation of effective remedies to combat such problems. Pregnant women, who frequently suffer from ailments relating to urinary tract infection (UTI), insomnia, hypertension, thrush, and varicose vein, particularly respond well to Homeopathy medicines [18–20]. However, during field work, the use of such therapeutic regimen was hardly evident.

An AYUSH physician (Homeopathy specialization) also testified the therapeutic efficacy of AYUSH drugs in promoting maternal health:

“When pregnant women visit dispensary regularly, this provides scope for follow-up and helps in ascertaining the prognosis at different stages of labor. It is found that the progress of pregnancy is then quiet smooth and results in normal delivery compared to cases where no homeopathic medicine is taken. However, lack of specialized AYUSH inputs to emergency maternal care compels them to use it as a preventive rather than a dedicated system of care.”

Another AYUSH doctor (Ayurveda specialization) spoke thus:

“Pregnant women who regularly take AYUSH medicines are sometimes forced to take allopathic medicines and undergo surgical procedures because of emergency interventions. But, after the emergency episode gets over, they revert to AYUSH medicines being overtly concerned about the side effects of allopathic medicines. There is a heightened sensitivity among tribal community to this.”

3.7. Inadequate integration of AYUSH with local health traditions and home remedies

There is an excessive reliance on pharmaceutical compositions in pregnancy care. Many folk medicines in Jaleswar which use local botanical resources have hardly been explored by AYUSH doctors for their potential in improving maternal health.

During field work, it was found that the region is rich in many medicinal herbs and plants such as Tulsi (*Ocimum sanctum*), Guduchi (*Tinospora cordifolia*), Dadima (*Punica granatum*), Haritha Manjari (*Acalypha indica*), Matsyakshi (*Alternanthera sessilis*), Chakramuni (*Sauropus androgyne*), Nimba (*Azadirachta indica*), Parnayavani (*Coleus amboinicus*), Shigru (*Moringa oleifera*), Agastya (*Sesbania grandiflora*), Brahmi (*Bacopa monnieri*) and Kakamachi (*Solanum nigrum*) – all of which can play a significant role in maternal health.

Historically, tribal pregnant women have had less access to modern biomedicines and rely on local healers and traditional herbal remedies. For example, peppermint leaf (*Lamiaceae mentha*) is used for curing morning sickness, ginger roots (*Zingiber officinale*) for nausea and vomiting and triphala (*Embllica officinalis*, *Terminalia bellirica*, *Terminalia chebula*) for ailments of stomach and abdomen during pregnancy.

The AYUSH system in a government facility offers the rural tribal women a system of healing, which is very similar to LHT and home remedies provided by local healers and hakims. Barring emergency conditions, tribal women have a greater dependence on traditional and home remedies. Therefore, an effective AYUSH health delivery system needs to align local resources through the greater affirmation of their medicinal worth. More specifically, there is a need for training of community workers – ASHAs to identify and administer local herbs and shrubs for common ailments of pregnant women. Moreover, since local healers play an important role in healing, their services could also be utilized for improving the integration of AYUSH medicines in the community.

3.8. Preexisting spatial bias

The marginalization of AYUSH is also evident in the spatial and architectural sense. AYUSH clinics in most of the health centers of Jaleswar are located in a secluded corner of the hospital premises and in some places the signage for AYUSH services is even not prominently visible. This spatial marginalization prevails against the operational guidelines for provision (in PHCs and CHCs), of a separate physician consultation room and a distinct space for storing medicines [21]. However, in reality, only one cramped room is available at PHC and CHC of Jaleswar. This spatial marginalization has negative consequences for integration of AYUSH services to Maternal Health Program. It goes without saying that like other pharmaceutical products, AYUSH medicines also require proper storage conditions and monitoring of shelf life to prevent decay. Hence, cramped conditions affect the quality of medicines and speedy delivery of services to women. It would be easier for the tribal women to adopt AYUSH system of medicine for various ailments if privacy, confidentiality, and accessibility could be ensured. Tribal rituals and beliefs on pregnancy are, in general, shrouded in secrecy and prevent openness and disclosure of problems. Hence, special precaution needs to be made to ensure private spaces for health inspection. By denying such spaces in PHCs of Jaleswar, the existing health delivery system subdues the medical choices of the tribal women and their family members.

3.9. Inadequate logistic cycle

There is also a poor logistic cycle to support the vibrant plan of integrating AYUSH in PHCs and CHCs. An interview with an AYUSH doctor (Homeopathy specialization) revealed that during the 1st year of his appointment to the dispensary, he could barely engage himself with diagnosis and treatment due to the lack of availability of medicines in the health center. During field work, many others complained of poor and insufficient medical stocks – a grievance commonly shared by doctors in different parts of the country running the NRHM program. AYUSH centers of Jaleswar were also found to lack many essential facilities and medical equipment such as examination table, equipment for monitoring blood pressure, and for assessing sensory reflexes through knee hammer, and had to rely on resources of the allopathic dispensary for such basic clinical investigations.

AYUSH doctors in Jaleswar complained of not being consulted in drug procurement plans, which drastically affected the prioritization of medicines according to the local needs. While the computerized system of Odisha Drug Inventory Management

Information System takes care of the procurement and supply of allopathic drugs and consumables for the community, AYUSH medicines are unfortunately left out of its scope, thereby, bringing inefficiencies in the logistic cycle and creating bottlenecks in procurement and quality control. In addition, the drug management policy is currently not supported by an Expert committee, which could help to identify priority needs for replenishing essential AYUSH medicines according to local characteristics those at times fall outside the purview of a Centralized Drug List. Although a digital monitoring system for drugs has been introduced, it only brings many errors and complications without bringing efficiency in procurement, maintenance, quality control, and preservation of AYUSH drugs.

4. Discussion and recommendations

Strategies and policy prescriptions regarding an integrative framework of health delivery involving AYUSH system of medicine find an appropriate place in government documents, such as the framework for implementation of NRHM (2005–2012), report of the working group on AYUSH (by Planning Commission), and mainstreaming of AYUSH and revitalization of LHT under NRHM [7,22,23]. However, 10 years down the line after the implementation of NRHM, the system faces many pitfalls, the chief burden of which is borne by the Maternal Health Program. The study in tribal dominated Jaleswar block in Odisha highlights the dissociated reality of AYUSH. Ironically, alternative and folk medicines have been an integral part of Odisha's medical history for centuries. The AYUSH system, which shares and incorporates many common features with some of the local healing traditions, has a natural demand in the tribal community, generally known for its resistance to biomedicine. Moreover, the consideration of birthing as a natural phenomenon in women's life, rather than a disease, subject to rigorous monitoring and hospitalization (as in the biomedical paradigm), is still not a familiar phenomenon in the tribal culture. The focus on collocation of AYUSH system in such a region is thus both theoretically and strategically sound primarily because of three reasons— its affordability, accessibility, and its congruence with tribal health beliefs and customs. Unfortunately, Jaleswar presents a dismal scenario characterized by structural biases on one hand and by poor management and

orientation of the AYUSH doctors on the other hand. These structural biases are reflected in poor deployment conditions. Poor job profile, disproportionate salary structure, and contractual appointments have also been unraveled by other studies despite security and salary factors being identified as motivating factors by AYUSH doctors working in PHCs and CHCs [24–26]. In addition, their deployment for IEC activities rather than specialized inputs for gynecological conditions, contribute to considerable subordination and deprofessionalization in the overall system of health delivery. Similar arguments are also found in the studies of scholars [27,28].

The structural biases are also reflected in poor infrastructure and inadequate equipment and medicines. Similar problems have also been identified in Rajasthan and in other Indian states such as Andhra Pradesh, Uttar Pradesh, Bihar, and Rajasthan [29,30]. A multi-state Indian study in three different states, Kerala, Meghalaya, and Delhi, also reports a lack of infrastructure and coordination as the main obstacle for delivery of health services [28].

A major impediment in AYUSH delivery is the inadequate logistic cycle of medicines, which creates difficulties in dispensing medicines to the pregnant women in Jaleswar. Lack of effective monitoring of supply chain management for AYUSH drugs and consumables create problems in the follow-up of patients and specialized care. Such delays in supply and erratic replenishment of AYUSH medicines have also been observed in Andhra Pradesh [25]. In addition, studies from Delhi show lack of a robust logistic mechanism with improper indentation, supply, and storage of medicines [28].

Given such glaring problems, the question may be raised whether collocating AYUSH does actually have a beneficial effect? A study in Chandigarh reveals that mere collocation of AYUSH facilities creates a high degree of satisfaction among women [31]. The present study suggests that without a robust health delivery mechanism and effective guidelines for cross referrals, collocation may not be a fruitful strategy. If AYUSH were to serve an important place in maternal health, it needs to be fully equipped to handle all emergencies, a feature not difficult with its available staff of postgraduate personnel who could provide specialty services had they been technically supported in the PHCs and CHCs. In other words, there is a need for greater strengthening of its own treatment and referral network rather than shifting critical gynecological cases to biomedical domain. It may be mentioned that

Table 3
Integrating AYUSH for improving maternal health: a few challenges and remedial measures.

Challenges	Remedial measures
Unexplored scope of existing AYUSH infrastructure	Improved utilization of existing AYUSH infrastructure and human resources Sufficient manpower staffing at PHCs and CHCs for availability of AYUSH specialized services
Low level of awareness about the AYUSH system at grass root level	Disseminating awareness about AYUSH through mass media, panchayat meetings, and tribal fairs Building a cadre of human capability at grass root level
Pre-existing spatial biases in the health centers regarding AYUSH services	Providing sufficient space for diagnosis, treatment and warehousing facility of AYUSH medicines Installing good signage and navigation system within existing health centers for guidance of the pregnant mothers
Underutilization of grass root level workers for popularization of AYUSH medicines	Providing AYUSH medicines in the ASHA kit Providing training to ASHAs and ANMs in indigenous and ethnomedicine
Neglect of folk medicine as an alternative care system	Documenting local medicinal resources and empowering pregnant women for self-care Preserving the herbs and shrubs in medicinal garden for easy availability and accessibility by vulnerable groups
Inadequate logistic cycle	Extending computerized system of ODIMIS in procurement and supply of AYUSH medicines
Lack of standard guideline and protocol for treatment	Evolving standardized protocol for AYUSH doctors
Diversified job chart of AYUSH doctors	Specialized job chart for AYUSH doctors in their respective stream of specialization Recruiting special cadre of public health professionals (in place of AYUSH doctors) for field level activities
Improving quality of AYUSH services	Providing full tenure to AYUSH doctors Adequate remuneration comparable to their allopathic counter part CME for AYUSH doctors Provision of specialized and refresher training

AYUSH = Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homeopathy, PHCs = Primary Health Centers, CHCs = Community Health Centers, ASHAs = Accredited Social Health Activists, ANMs = Auxiliary Nurses and Midwives, ODIMIS = Odisha Drug Inventory Management System, CME = Continuing Medical Education.

there is a provision in the guidelines for referral of AYUSH patients to higher centers for specialized AYUSH care from PHC to higher centers. According to AYUSH operational guidelines, there needs to be an AYUSH OPD clinic at PHCs, CHCs and full-fledged AYUSH wing with specialty care at District Head Quarter Hospital [21]. However, in reality, the referral network is not kept functional with the result that most pregnant women have to fall back on biomedicine.

At the community level, some degree of reorientation of AYUSH doctors regarding the scope, strength, and limitations of integrative health care, improved management of critical cases, and appreciation of community characteristics are required [32]. Improper coordination runs the risk of disastrous outcomes in the delivery of health care services in rural India, a feature noticed in different studies in other Indian states as well [33–35].

Integrative medicine in a tribal community needs greater effort toward identifying medicinal plants and orienting drugs according to familiar dietary and healing strategies of the community. Table 3 presents a few challenges and recommendations for improving AYUSH's contribution to Maternal Health Program in Jaleswar. Recommendations along similar lines have, in fact, been submitted to the Ministry of Health and Family Welfare along with the suggestion that AYUSH physicians practice their respective specializations at local PHCs rather than heading PHCs in far-flung areas in order to ensure a greater familiarity with local community needs [36]. According to normative guidelines, health workers such as ASHAs, ANMs also need to be trained in dispensing AYUSH medicines, particularly Ayurveda supplements for iron deficiency of pregnant women and Homeopathy formulations for both health promotion, basic, and emergency care. But, field observations suggest that few AYUSH medicines are available in ASHA kits and their supply and replenishment are seriously affected. This has unfortunately given the evidence about high reliance on indigenous therapies among tribals for maternal health in other districts of Odisha [37]. The *Santhals*, *Bhujus*, and *Bhumijas* of Jaleswar too have strong belief on folk and indigenous medicines and an integrative approach is likely to yield good outcomes for maternal health.

5. Conclusion

The study concludes that although there is a huge scope for integrating AYUSH in Maternal Health Program under the ongoing NRHM, the full potential is yet to be exploited. In Jaleswar, serious barriers exist in creating a dedicated AYUSH workforce and in training ancillary health workers to improve the acceptability of AYUSH in the community. The study has also highlighted special provisions that need to be made for remote tribal-dominated regions such as Jaleswar, which already have a rich history of LHT and home remedy. Given the fact that these regions are economically underdeveloped, have distinct orientation toward natural healing systems, AYUSH on account of its holistic approach and proven cost effectiveness can be a viable option for improving maternal health. However, to make the plan operationally vibrant, the existing glitches in medicine procurement, storage and supply need to be removed. The spatial de-marginalization of AYUSH also needs considerable attention from the planners through architectural modification and not mere collocation of services as envisaged by the government.

Source of support

Nil.

Conflicts of interest

None declared.

Acknowledgment

University Grants Commission, New Delhi, India, for providing UGC-SRF fellowship to Dr. Ranjit Kumar Dehury UGC-REF. NO. 1995/ (NET-DEC. 2009)/ 27 AUG 2010. The authors also acknowledge the anonymous reviewers for their scholarly criticism.

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