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Strategies for Retaining Health-Care Professionals in Rural Areas of India

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ABSTRACT

Background: Retention of skilled health workforce in rural and remote areas is a global problem. While global literature is expanding towards rural retention, however, in the developing countries like India, there is little information available on relevant strategies for implementation of universal healthcare policies and provision of equitable health care distribution. In this review article, the current strategies to retain health-care professionals are generally be grouped into educational, financial, regulatory and supportive strategies. After that, we document and debate two cadres (i.e. physicians and nurses) involved in primary health care in India and the strategies adopted for improved rural retention in these cadres. We also provide ample evidence to support these strategies and analyze their rationale in augmenting health workforce distribution in India. Lastly, we propose pragmatic ways to deal with future human resource for health reforms.

Methods: Literature search was conducted in various electronic databases such as Google Scholar, MEDLINE, PUBMED and EMBASE with relevant key words such as doctors, nurses, health workers, health care professionals, human resources for health, *etc*. Additional studies were also identified through cross-references and websites of official agencies.

Results: We found that, in educational strategy, reservation for post-graduation seats for medical graduates and in-service physicians (doctors currently working in primary health centres) have been employed in various states of India for rural service. The financial incentive strategy includes incentivizing rural service for both medical doctors and nurses. Under regulatory strategies, better workforce management such as transparent posting mechanisms, shorter recruitment procedures and rotational postings in difficult areas have been employed. Apart from this, other types of health workers such rural medical assistants (RMAs) and alternative medicine (Ayurveda, Yoga, Unani, Sidha and Homeopathy) – collectively known as AYUSH have also been trained and recruited for rural health care practice.

Conclusion: In India, rural retention strategies are predominately focused towards physicians. However, state-based evidence and international literature suggest that by providing appropriate financial incentives for rural service to nurses and other cadres such as AYUSH and RMAs is cost-effective and less challenging than the allopathic cadre. Hence, there is an advantage on strengthening rural incentive strategies in these cadres. Further, for these cadres, along with salary, other non-monetary incentives (such as better working conditions, children's education, good rural living conditions and safety) are needed that can increase rural retention.

Keywords: *Human resources for health, health worker, physicians, nurses, retention, rural retention, recruitment, primary health care, India.*

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INTRODUCTION

In India, health service delivery is severely compromised by the absence of qualified health-care professionals. The trained health care providers mainly physicians and nurses are concentrated in major cities

of India whereas, the semi-qualified or unqualified practitioners are more skewed towards rural areas[1,2,3]. The national survey also revealed that up to 63% of practitioners serving in rural areas of India do not have adequate training[2]. Further, India has been identified as one of the 57 countries in the world that face a substantial scarcity of human resources for health[4]. Indeed, the density of medical doctors, nurses and midwives is one fourth of the WHO benchmark of 2.5 per 1000 population required to achieve 80% coverage of health care services in cross country comparisions[2,5]. Further, the recent estimates in India states that, there are 3.8 (11.3 in urban areas and 1.2 in rural areas) physicians per 10,000 population. Also, there are 1.7 (4.3 in urban areas and 0.7 in rural areas) nurses per 10,000 population in India[2]. This represents a large difference in the distribution of health workers in urban versus rural areas of India.

In this paper, the current strategies to retain health-care professionals are generally be grouped into educational, financial, regulatory and supportive strategies. After that, we document and debate two cadres (i.e. physicians and nurses) involved in primary health care in India and the strategies adopted for improved rural retention in these cadres. We also provide ample evidence to support these strategies and analyze their rationale in augmenting health workforce distribution in India. Lastly, we propose pragmatic ways to deal with future human resource for health reforms.

MATERIALS AND METHODS

We searched the relevant literature in electronic databases such as Google Scholar, MEDLINE, PUBMED and EMBASE. The key words such as "doctors", "nurses", "midwives", "health workers", "health care professionals" and "human resources for health" have been extensively used. Further combination of key word such as "health workforce" in combination with "India" "rural" "remote" "difficult to reach", "retention policy", "retention strategy", "financial incentives", "retention", "deployment", "personal development" or "professional development", etc. have been used to ensure that the larger data base can be viewed that added more refinement to search strategy. Cross references from identified articles mainly Indian government policy documents and reports were also used to expand the coverage. Also, websites of official agencies such as WHO, ILO and National Rural Health Alliance were accessed for related information. Only literatures written in English and published until 2015 were considered for review.

RESULTS

Educational strategies

For doctors

Post-graduation seat reservation for rural service

States such as Assam, Chhattishgarh, Kerala and Tamil Nadu have adopted post-graduation seat reservation for physicians who complete some years of rural service. There is an intense competition between specializations among undergraduate medical students to go for post-graduation programme and therefore linkages of rural service and post-graduation education seems to be a predominantly lucrative incentives for retaining physicians to rural jobs. The very recent reports have provided information on various types of post-graduate schemes that different states have implemented[6].

Compulsory rural service

Several states of India like Odisha, Meghalaya, Manipur, Assam, West Bengal, Tamil Nadu, Arunachal Pradesh, Gujarat and Chhattisgarh have started compulsory rural service for all fresh medical graduates. This mandatory rural service period required up to 5 years for graduates to engage in rural practice against a financial bond[7]. There are some states such as Kerala, Mizoram, Uttarakhand and Odisha have kept additional marks for post-graduation studies for doctors who have completed mandatory rural service period[6].

For nurses

The "Swalamban Yojana (self-reliance plan) launched in Madhya Pradesh state in 2006-2007 with a prime objective to address the shortages of staff nurse. Rural women from underserved districts were selected and given them to nursing education. After completion of the nursing course, they were bonded to serve in rural and remote areas for 7 years or need to pay a penalty of 200 000 Indian rupees (US$ 2980) if they violate the contract. Another pioneer evidence in this regard is from the West Bengal state, where the state faced severe challenges to recruit 10 000 auxiliary nurse midwives during the 5 years project implementation. In first step, the state revived 24 auxiliary nurse midwives

government schools and another 18 schools were made partnership with private hospitals. After that, the local governance body (village panchayats) were given power to choose a women from the village to train as an auxiliary nurse midwives for that village which was employed by the local government. By 2009, the state appointed more than 4000 auxiliary nurse midwives and many more with on-going training to be filled up lateral days[8]. The initial findings of all these strategies are encouraging but the effectiveness of such programmes on nurses still needs to be measured.

Financial incentive strategies

In India, financial incentives for rural practice is widely used strategy to attract physicians to work in underserved areas. Various states define their categorization of areas that are underserved. These underserved areas are based on the distance from urban areas, accessibility, difficult to reach areas, geographical terrain, tribal areas and areas of conflict. Various states given incentives based on the cadre of health worker and on the way each state categorizes underserved areas. The most recent article provided information on monthly financial incentives given to doctors and nurses working in rural and underserved areas[8]. Interestingly, it is seen that most of the financial incentives working in rural areas are mainly focused to medical doctors.

Regulatory strategies

Improvement in workforce management practice

Indian states like Haryana have started simple recruitment procedure to hire medical doctors through walk-in interviews[9]. This have reduced prolong stays of appointment experienced through the normal process, such as advertising the posts, conducting state public service commission exams, announcing list of candidates and sending acceptance letter. At present the interested candidates simply present themselves in the health departments, complete selection process and if successful, offer letter were issued along with their appointment. The state governments claimed that this procedure has led reduction in vacancies in health sector of Haryana[9] and is still being practiced. The states like Tamil Nadu and Karnataka found that the morale of the doctors can be improved by providing rotational posting in underserved areas to ensure that all doctors spend some years in rural areas, after which they could choose to be transferred to other areas[8].Currently, government is also trying to encourage different states to adapt transparent transfer policy and timely placement for doctors and nurses.

Production of new types of Non-physician Clinicians (NPC)

In India, the other types of health workers have been added in the public health systems. These workers receive formal medical training within certain period and perform clinician role as anticipated from doctors. For instances, Chhattisgarh introduced 3 year of formal medical training (instead of 5 years for MBBS study) for RMAs in 2001 and students upon completion of this course were employed in Primary Health Centres (PHCs)[6,10]. A similar course for rural health practitioner has been offered in Assam state since 2004[10]. Under the National Rural Health Mission, another form of NPCs, AYUSH doctors are equipped with alternative medicine and employed in PHCs to mainstream Indian systems of medicine[2,3].

Personal and professional strategies

Some of the states such as Chhattisgarh, Uttarakhand and West Bengal has provided group housing facilities for physicians[8]. At present, government is trying to provide better residential infrastructure for both physicians and nurses, so that they can retain and work in rural areas.

DISCUSSION

Our study is based on the review that represents varied strategies adopted by pluralistic Indian states to attract health workers in rural areas. Hence, in this chapter, we use evidence from both local and international studies to discuss some of these strategies and offer their significance in improving distribution of health workforce in India.

Educational strategies

It has been found that different states in India implemented various types of post-graduate scheme for physicians to attract them for rural service. The effectiveness of post-graduation scheme have been evaluated through a case study approach in Andhra Pradesh state of India and the findings are also encouraging[11]. To be eligible for this scheme, a physician was required to work 2 years in the tribal area, 3 years in the rural areas or altogether of 5 years

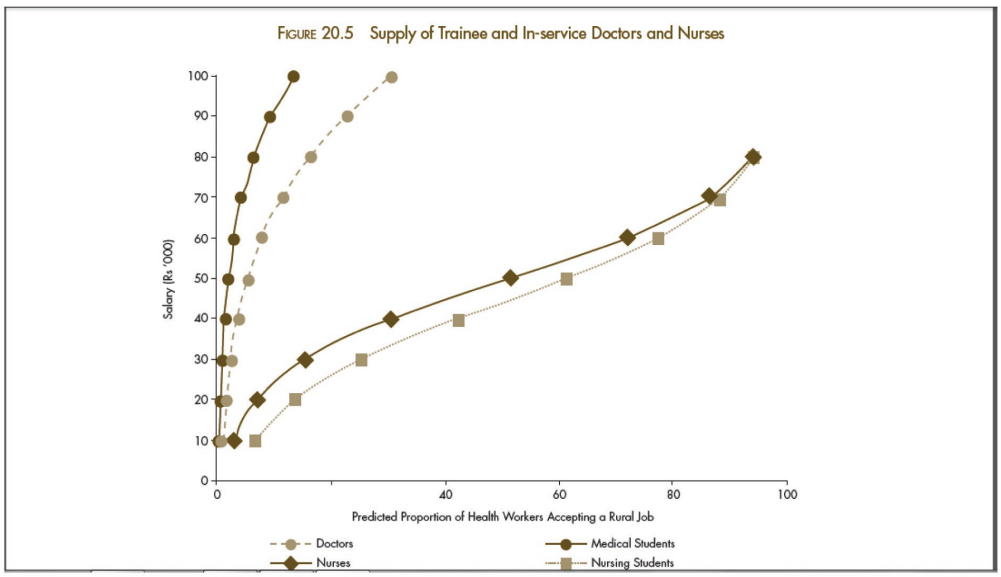
of experience in the government sector. Further, a doctor have to serve 5 years in the state governments after completion of post-graduate programme against a monetary bond. The outcome of this scheme reveled that although in 2007, 209 PHCs in Andhra Pradesh had no doctors, they are now reduced to zero[11]. In addition, only 2% of government sanctioned posts are vacant with modest progress in filling the specialist posts which have been envisioned mainly due to induction of post-graduate scheme. This post-graduate scheme case study in Andhra Pradesh appears to have potential effect and appeal, hence requires to scale up in other states where predominant number of medical schools with ample post-graduation seats are reserved for government physicians. In addition, the eligible criteria for availing such scheme like total number of years required to work in underserved areas before and after completion of post-graduation study, need to be finely tuned, so that the scheme remains attractive.

The rural service for mandatory period (up to five years) for all fresh medicine graduates to involve in rural practice appears to be a welcome step by the various state governments of India. However, there is scarce evidence on the effectiveness of the compulsory rural scheme in India. Frehywot 2010 reviewed the various compulsory programmes adopted across the globe to retain health-care professionals. This review found that more than 70 countries have been adopted compulsory service programme including Ghana, Nigeria, Cuba, Congo, Bolivia, Educator, Mexico, Norway and Russia. However, effectiveness of this compulsory service programme have not been affectively measured by many countries and the outcome of this study have resulted a mixed results with respect to retention of skilled health workers in rural areas[12]. Health workers after completion of rural service period were not sure to be able to continue in the same job, thus such scheme impedes the continuity of care provided to community[12].This negative experience may cause an adverse effect towards career decision of health-care professionals to work in rural areas[13]. Further, other international studies have also highlighted the inclusion of compulsory rural service with other incentive measures and support mechanisms to health workers[14,15]. This international evidence suggest that we should be careful while implementing such schemes in India. It is a herculean task for Indian government to implement such scheme. The anecdotal evidence suggests that the state where such scheme is initiated or implemented, there is difficulty to monitor the scheme. In such a situation, it is difficult to argue whether the effectiveness of such scheme improves the shortages of rural health posts or population health by providing adequate healthcare provision to the communities. Like for the nursing cadre, the states like Andhra Pradesh initiates to upgrade the general nursing degree to a bachelor's degree equivalent[16]. This finding is consistent with other studies that show educational incentives for nurses could work in international settings[17], but in Indian context there is little information about the effectiveness of such incentives on nurses.

Financial incentive strategies

In India, monetary incentives is commonly used strategy to attract physicians and nurses to serve in underserved areas. Indian studies found that though financial incentives are important, at the same time inclusion of other benefits such as improvement in living conditions, better housing, schooling and access to transport are also needed. The qualitative findings from India suggest that better salary for underserved areas are critical to attract and motivate doctors to serve in rural areas[16]. However, the effectiveness of financial incentives have not been widely studied in India. International evidence have also shown limited role towards its effectiveness especially when nominal monetary incentives are given to health-care professionals. The systematic review of 10 studies conducted by Sempowski 2004 investigated the effectiveness of the financial incentives in exchange of return of rural service commitments revealed that a short term benefit may be envisaged for financial return of service programme but the long term impact was unclear[18]. Further, one prospective cohort studies included in this review mentioned that voluntarily rural service opted physicians were more likely to stay in underserved areas than those doctors serving in rural areas due to return of service commitments[18]. Similarly, one study conducted in India on the effects of higher salary on the uptake of rural jobs by trainee and in-service doctors and nurses[19] found that for every salary level, a considerate proportion of nursing students and nurses were willing to join a rural job as compared with medical students and physicians (Figure 1). The study also revealed that the supply of medical students and in-service doctors for rural jobs were not responsive towards increase in salary, particularly at lower salary levels. However, the supply of nursing students and

nurses for rural posts were much more responsive towards increase in salary, particularly at lower salary level as compared to medical students and physicians. Also some states in India offer financial incentives to nurses[8] which is congruence with international evidence[17] stating that such incentives could work in international arena, but the effect of these incentives on nurse is poorly captured in Indian context.



Source: Rao et al. 2013c[19]

Regulatory strategies

Our study found some of the states have adapted better management reforms such as shorter recruitment procedures, transparent posting mechanisms and rotational postings in difficult areas for physicians. However, one of the major organizational constraint that state governments face today is the imprecise policy for transfer and posting within the state health services. Most states don't have a workforce policy that guarantees doctors to be rotated between rural and non-rural postings, giving rise to the perception that once posted to a rural areas it is difficult to return to urban locations. Hence, better management practice requires transparent recruitment process leading to a better rural recruitment and this have been evidenced in states like Haryana[9]. Such a practice need to be piloted and replicated to other states too.

Further, our study highlights two states of India, Assam and Chhattisgarh have trained NPCs commonly known as RMA to provide primary health care and they have been successfully addressing the shortages of physicians and nurses in rural India. This local evidence is supported with other international literatures that argues that NPCs has now increasingly viewed as a cost effective way of offering basic rural health care in the absence of physicians[20,21,22]. A number of countries like Sri Lanka, Nepal, Bangladesh and 25 countries in Sub-Saharan Africa out of 47 countries, NPCs are the prime provider of rural health, sometimes even deliver specialist services[23,24,25]. This international evidence shows positive results about the effectiveness of such cadre. This evidence is also in consistent with Indian studies. For instances, an evaluation of RMAs in Chhattisgarh observed that the competence level of RMAs are equal with that of physicians to diagnosis common rural ailment generally prevalent in PHCs[26]. Another study examined the satisfaction level of households with clinical service delivered by RMAs have also seen equal with physicians[27]. Such evidences clearly indicates that RMAs with adequate training can provide primary health care and well competent with physicians.

Another type of health worker i.e. AYUSH doctors have been appointed in Indian health care system to provide primary health care. However, there are limited information available on competence and effectiveness of AYUSH physician located in rural areas. The study of Department of AYUSH, Ministry of Health and Family Welfare (MoHFW) highlights the need for strengthening

the regulatory frameworks and operational guidelines within which AYUSH doctor can operate[28]. Preliminary findings from the Chhattisgarh state have revealed that the competency level between AYUSH doctors and allopathic physicians are not huge with respect to provision of allopathic primary care[26]. However, inclusion of additional training programme are needed for AYUSH providers to achieve the level of allopathy.

CONCLUSION

Our study observed that the reservation for post-graduate education incentives for physicians can be considered as a powerful mechanism to bring physicians to underserved areas for a temporary period. Consequently, provision of sufficient monetary benefits may act as a powerful tool for retaining allopathic doctors in rural areas. Further, it seems that Indian government's incentivizing rural service for nursing profession is less challenging than that of allopathic cadre. However, at present, the government offer few rural incentives to nursing cadre. Thus, there is worth in strengthening rural retention strategies for nursing profession in taking more promising role for rural health.

The fundamental question is whether we are focusing on choosing the right types of health worker. The experience says that the personal and professional ambitions of allopathic doctors are not well-suited with the life of a rural practitioner. Physicians aim to become specialists and after specialization there is less likelihood that a physician would be attracted towards the rural practice. In such situations, it would appear that alternatives to health worker is in the form of NPCs who can provide the rural health care for longer periods. Nurses trained to provide clinical care is another substitutions for rural service. It has been seen that nurses are more amenable to join government jobs than the medical doctors and can be easily placed in rural and remote areas. Hence, NPCs can be an important human resources for health for providing equitable health care services in the rural and underserved areas.

Notes: 1 US dollar = 67 Indian rupees at the time of study

Conflict of Interest: The authors declare that there is no conflict of interest

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Ethical Clearance: As the study is a review and did not involve any drug trail or invasive procedure, no ethical clearance from intuitional review board was required. However, the study was approved by doctoral committee member of Faculty of Public Health, Mahidol University in order to partial fulfillment of the requirements for the degree of Doctor of Public Health, Faculty of Graduate Studies, Mahidol University.

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