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RESEARCH ARTICLE

IMPROVING THE RECRUITMENT AND RETENTION OF HEALTHCARE PROFESSIONALS IN RURAL AREAS: EVIDENCE FROM THE MEDICAL DOCTORS OF SIX DISTRICTS OF INDIA

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ABSTRACT

BACKGROUND:

The Human Resource in Health (HRH) crisis is one of the most critical constraints to achieving health and development goals. In this study, the WHO's recommendations were used to highlight the health workforce issues in remote and rural areas with a prime focus on four major policy domains: education, regulatory, financial incentives, and professional and personal support.

OBJECTIVES:

Medical doctors are one of the essential frontline health workers for primary health care in rural India. This study adopted World Health Organization's (WHO's) human resource policy framework to evaluate doctors' responses in understanding the recruitment and retention of medical doctors in rural areas.

MATERIALS AND METHODS:

A cross-sectional, descriptive study was conducted in the rural and remote areas of Odisha state, India. A multistage sampling procedure was used to select the participants, who were all government medical doctors working in rural and remote locations. The primary outcome measure is percentage responses using WHO's Human Resource policy framework.

RESULTS:

Medical doctors working in rural and remote areas perceived the practice as challenging. They were mainly least satisfied with the items asked in the professional and personal support domain. However, more than half of the doctors (56.7%) are eager to work in remote and rural areas for the next three years.

CONCLUSION:

Public health administrators and policymakers should create an enabling environment and design interventions encouraging doctors to stay in remote areas. Most importantly, this includes a political and financial commitment to achieve targeted interventions.

KEYWORDS

Intention to stay, education, regulation, financial incentives, professional and personal support, rural areas.

INTRODUCTION

The world is witnessing a shortage of medical doctors, especially in remote and rural areas, which limits access to primary healthcare services. [1] The World Health Organization (WHO) has recognized human resources for health (HRH) as a significant challenge globally and, hence high priority area for intervention. [2] In 2013, the estimate showed a shortage of about 17.4 million global health workforces, of which 2.6 million are physicians worldwide. [3,4]. It is estimated that more than 44% of WHO member states do not meet the criteria of the WHO standard of one doctor per 1,000 people. [5]

India, a low and middle-income country with a population of 1.2 billion, faces a scarcity of medical professionals. [6] Many trained doctors leave India to work abroad, and the remaining prefer to work in urban and city areas. This results in an uneven distribution of physicians in rural versus urban areas in India. [7] The 2016 report on rural health statistics in India indicated that there is a shortfall of around 11.6% of physicians at primary health centre (PHC) and 81.2% of specialist doctors in the community health centres. [8,9]

A study in an industrialized country revealed that inadequate housing facilities, lack of children's education, social isolation, poor rural infrastructure, lack of career development, and fewer incentives were major barriers to working in rural areas. [9,10] In many studies, issues like electricity and drinking water facilities, financial incentives, and insufficient resources were primary deterrents for doctors to work in rural areas. [8,9,10]

Different countries have several strategies for retaining doctors in rural areas, which include financial benefits and non-financial benefits (such as education facilities for children, living condition improvement, and career growth opportunities). [10] The Indian government has also made numerous efforts to attract doctors to rural areas, such as the provision of rural incentives [11], preferential education for post-graduation studies after working a fixed period in rural areas [12], and compulsory field experience, and rural service after the completion of medical studies. [9, 12, 13] Further, limited research has been conducted in India to understand the factors that can improve rural practice. [7,9].

The HRH crisis is identified as one of the most critical constraints for achieving health and development goals. In 2016, WHO launched the Global Health force strategy 2030, to support member countries' recruitment plans in supporting the achievement of Universal Health Coverage. [14] In this study, the WHO's recommendations were used to highlight the health workforce issues in remote and rural areas with a prime focus on four major policy domains (a) education (b) regulatory (c) financial incentives, and (d) professional and personal support and 16 sub-domains. [10]. There needs to be more studies on the retention of the health workforce in rural areas in India, using the WHO policy framework. Therefore, this study aims to investigate medical doctors' preferences for retention in rural areas based on WHO's policy framework. The findings would play an essential role in guiding the development and implementation of a retention strategy and policy by the Indian government. In addition, other countries with similar contextual issues might find this equally helpful.

MATERIALS AND METHODS

STUDY SETTINGS

The study was conducted in Odisha state of India, with a population of 42.0 million. [15,16] There are 30 districts in Odisha, and it is classified into two regions (a) KBK+ regions (total of 11 districts comprise 25% of the population) and (b) non-KBK+ regions (total of 19 districts comprise 75% of the population). The KBK+ regions are situated in the southern part of Odisha, with low health indicators, poor living conditions, and weak economies. All KBK+ districts are well-known as tribal areas and face chronic shortages of doctors. [17] Nearly 30% of doctor posts in Odisha at different health facilities are vacant. [18,19,20] The acronym KBK is used widely to represent eight districts of the undivided Kalahandi, Balangir, and Koraput districts of Odisha, according to the Planning Commission Government of India. This classification is used in the development sector, including healthcare planning by the government and non-government agencies.

METHODS AND SAMPLING

The study was a cross-sectional survey, and the participants were medical doctors working in rural hospitals based in Odisha. A multistage sampling strategy was employed to select the study districts and respondents. Firstly, six districts were selected, three randomly from non-KBK+ districts (i.e. Bargarh, Balasore, and Dhenkanal) and another three randomly from KBK+ districts (i.e. Koraput, Kalahandi, and Bolangir). The final sample size of 255 was determined by calculating 50% of the total number of doctors in the six

sample districts and including a 10% non-response rate. The ethical approval of this study was granted by the Ethical Review Committee for Human Research, Faculty of Public Health, Mahidol University, Bangkok (COA No. MUPH 2016-094). This study was also approved by the Research Committee of the Department of Health & Family Welfare (DoHFW), Government of Odisha (Letter No. 179/SHRMU).

INSTRUMENT MEASUREMENT

The data collection was done using a structured questionnaire that has three parts, as described below:

Part I Personal and general characteristics of doctors: It includes age, sex, marital status, religion, work experience, and distance of present residence from the workplace.

Part II WHO's four policy domains of increasing access to health professionals in rural and remote areas: It consists of four domains (i) education (ii) regulatory (iii) financial incentives, and (iv) personal and professional support.

Part III Intention to stay among doctors: It is defined as a stay and continues working in rural areas for at least three years.

The questionnaire was pretested among randomly selected 30 doctors working outside the study area in Odisha. Based on the findings of the pretest, the tool was modified, and finally, an English version of the questionnaire was administered.

DATA COLLECTION

Participants took between 30-40 minutes to complete the questionnaire. Data were collected from October 2016 - February 2017 at the study site.

DATA PROCESSING AND ANALYSIS

All data were cleaned, coded, and then entered into IBM SPSS software (version 18). The quantitative study used descriptive statistics such as frequencies, proportion, the mean and standard deviation to describe the characteristics of study participants and four domains of the WHO framework on increasing access to health workers in rural and remote areas.

RESULTS

There were 255 doctors approached with the questionnaire; only 233 doctors completed the questionnaire yielding a response rate of 91.37%. The doctors are found to be primarily young males, with an average of 7.66 years of experience.

EDUCATION DOMAIN

The details of the education of the doctors serving in rural are and their place of education s given in Table 1

TABLE 1: PERCENTAGE OF EDUCATION DOMAIN OF THE INVESTIGATED DOCTOR

Items	Number (%)
Home location belongs to	
City	43 (18.5)
District	44 (18.9)
Sub-district*	55 (23.6)
Village	91 (39.1)
Medical college located during studies	
City	171 (73.4)
District	38 (16.3)
Sub-district*	24 (10.3)
Inclusion of rural health topics in the medical curriculum	
Not at all	15 (6.4)
Hardly any	19 (8.2)
Briefly	115 (49.4)
Considerably	62 (26.6)
Extensively	22 (9.4)
Accessing in-service training on a regular basis	
Not at all	21 (9)
Rarely	35 (15)
Sometimes	87 (37)
Often	57 (24)
Most often	33 (14)

*There are 30 districts of Odisha. Each district has been subdivided into different sub-districts to streamline the governance process.

REGULATORY DOMAIN

The results revealed that 49.4% of doctors are not involved in private practice to offer health services beyond their assigned office hours. Further, 49.4% of doctors could take leave 'sometimes,' and about 43% of doctors indicated it was 'very difficult' to get transferred to the desired place. The details of the regulatory domain of doctors' socio-behavioural issues have been given in Table 2.

TABLE 2: PERCENTAGE OF THE REGULATORY DOMAIN OF THE INVESTIGATED DOCTOR

Items	Number (%)
Able to practice privately beyond your assigned office hours?	
Not at all	115 (49.4)
Rarely	47 (20.2)
Sometimes	50 (21.5)
Often	10 (4.3)
Most often	11 (4.7)
Able to take leave when desired or in emergencies?	
Not at all	21 (9.0)
Rarely	74 (31.8)
Sometimes	115 (49.4)
Often	10 (4.3)
Able to get transferred to the desired place?	
Not possible at all	68 (29.2)
Very difficult	100 (42.9)
Unsure	39 (16.7)
With efforts	15 (6.4)
Have you undergone any compulsory rural service in the past?	
Never	53 (22.7)
Started but dropped in the middle	11 (4.7)
No mandatory policy for rural service	18 (7.7)
Currently undergoing	66 (28.3)
Completed already	85 (36.5)

FINANCIAL INCENTIVE DOMAIN

The result showed that nearly 48% of doctors received their salary 'most of the time', and another 21% of doctors received their salary 'always' on time. Further, nearly 43% of physicians had not received any additional financial incentives for working in rural areas, whereas 57% of physicians received additional financial incentives for rural service. The details of the retention issues reported by the doctors for the financial incentive domain is in Table 3.

TABLE 3: PERCENTAGE OF FINANCIAL INCENTIVES OF THE INVESTIGATED DOCTOR

Items	Number (%)
Receiving salary on time	
Never	10 (4.3)
Rarely	14 (6.0)
Sometimes	48 (20.6)
Most of the time	112 (48.1)
Always	49 (21.0)
Additional financial incentives being given for working in rural area	
Not receiving at all	100 (42.9)
Very inadequate	30 (12.9)
Inadequate	29 (12.4)
Just acceptable	58 (24.9)
Sufficiently	16 (6.9)
Additional pay you are receiving for transportation allowance? *	

Not receiving at all	68 (29.2)
Very inadequate	17 (7.3)
Inadequate	8 (3.4)
Just acceptable	7 (3.0)
Sufficiently	1 (0.4)
Additional payment or subsidy received for the cost of continuing education? *	
Not receiving at all	97 (41.6)
Very inadequate	3 (1.3)
Inadequate	2 (0.9)
Just acceptable	3 (1.3)
Sufficiently	0
Additional pay you are receiving for housing allowance	
Not receiving at all	104 (44.6)
Very inadequate	37 (15.9)
Inadequate	19 (8.2)
Just acceptable	11 (4.7)
Sufficiently	0

*Items maximum number of respondents responded Not Applicable.

PROFESSIONAL AND PERSONAL SUPPORT DOMAIN

The results showed that doctors were moderately satisfied with support services (such as patient, personnel, clerks, transport etc.) provided to them for the patient quality care (n=81, 34.8%) and the availability of drugs, medical supplies, and the latest equipment for quality patient care (n=84, 36.1%) in rural hospitals. However, they were least satisfied with many more aspects of the professional and personal support domain, which are detailed in Table 4.

TABLE 4: PERCENTAGE OF PROFESSIONAL AND PERSONAL SUPPORT DOMAIN OF THE INVESTIGATED DOCTOR

Items	Number (%)
Satisfaction on infrastructure and amenities (like water, electricity etc.)	
Least satisfied	117 (50.2)
Slightly satisfied	61 (26.2)
Moderately satisfied	43 (18.5)
Very satisfied	12 (5.2)
Satisfaction in the provision of government house*	
Least satisfied	127 (54.5)
Slightly satisfied	44 (18.9)
Moderately satisfied	41 (17.6)
Very satisfied	13 (5.6)
Satisfaction in availability of childcare and school facilities*	
Least satisfied	142 (60.9)
Slightly satisfied	36 (15.5)
Moderately satisfied	33 (14.2)
Very satisfied	10 (4.3)
Satisfaction in prospects of your spouse employment*	
Least satisfied	129 (55.4)
Slightly satisfied	31 (13.3)
Moderately satisfied	16 (6.9)
Very satisfied	13 (5.6)

Satisfaction in support services (personnel, clerks, transport etc.)	
Least satisfied	65 (27.9)
Slightly satisfied	60 (25.8)
Moderately satisfied	81 (34.8)
Very satisfied	27 (11.6)
Satisfaction regarding timely discussion with more experienced doctors	
Least satisfied	92 (39.5)
Slightly satisfied	52 (22.3)
Moderately satisfied	59 (25.3)
Very satisfied	30 (12.9)
Satisfaction on availability of drugs, medical supplies and equipment	
Least satisfied	64 (27.5)
Slightly satisfied	72 (30.9)
Moderately satisfied	84 (36.1)
Very satisfied	13 (5.6)
Satisfaction on receiving support from seniors through Tele-health	
Least satisfied	96 (36.9)
Slightly satisfied	56 (24.0)
Moderately satisfied	58 (24.9)
Very satisfied	33 (14.2)
Satisfaction on accessing professional bodies/network	
Least satisfied	105 (45.1)
Slightly satisfied	62 (26.6)
Moderately satisfied	49 (21.0)
Very satisfied	17 (7.3)
Satisfaction with any recognition or award for rural services	
Least satisfied	152 (65.2)
Slightly satisfied	41 (17.6)
Moderately satisfied	24 (10.3)
Very satisfied	16 (6.9)

*Item 2, 3, 4, 8 many respondents indicated NA, NA = Not Applicable

DISCUSSION

Using the WHO's framework, the study highlighted medical doctors' perceptions in India, on recruitment and retention issues in rural areas. The findings are discussed below under the adapted framework comprised of four domains of education, regulatory, financial incentives, and professional and personal support.

EDUCATION

The study showed that most of the doctors from rural backgrounds worked in rural locations, which is consistent with other studies. In a systematic review, it was revealed that doctors who came from rural backgrounds showed more affinity to work in rural areas than those doctors from an urban background. [21] Studies in Australia [22] and South Africa [23] show that physicians from rural backgrounds were more likely (10 times) to work in challenging and rural areas. The study revealed that most doctors studied medicine in city areas where medical colleges are located. Similarly, the medical colleges in Odisha are mainly located in cities, which is corroborated by other studies. [24] Evidence shows that including rural health topics in the medical curriculum for doctors might enhance the understanding of rural needs, contributing to the willingness to engage in rural and underserved areas. [25] Therefore, developing rural health topics further improves retention in rural postings in Odisha.

REGULATORY

Compulsory rural services for three years are a requirement for doctors in Odisha. [12] However, this regulation of

doctors practicing in rural areas is not limited to India; some studies revealed several countries had instituted mandatory rural service periods. [26, 27] For example, there is a compulsory rural service scheme under which doctors must provide rural health services in Thailand. [28] There is a compulsory rural service period in Bangladesh for doctors to offer primary health care. [24] Frequent political interference, lack of solid leadership quality, and administrative lapses make doctors work beyond the required service period, all contributing to rural posting difficulties. [29] Further, the results showed that about half of the doctors could take leave 'sometimes' when desired or in emergencies. Literature suggests that a well-defined and clear transfer policy and increased leaves are essential incentives for doctors' retention in rural areas. [30]

FINANCIAL INCENTIVES

The study indicated that about half of the doctors received additional financial incentives working in rural and remote areas. However, they mentioned that these additional incentives were 'very inadequate' or 'inadequate' or 'just acceptable' to them. The WHO financial incentives recommendation suggests a combination of fiscally sustainable financial inducements that are adequate to mitigate rural living costs. [10] In India, an additional monetary incentive is a commonly used strategy to motivate and attract a large pool of doctors to work in rural and remote areas. [11,12] Research suggests that though financial incentives are one of the most important and preferred strategies, equal provision should be made for other benefits; schooling facilities, better housing, electricity and water supply, and transport access are equally important to retain medical professionals in rural areas. [7]

PROFESSIONAL AND PERSONAL SUPPORT

The study results indicated that doctors were mostly least satisfied with the professional and personal support domain. It is believed that rural life might be harmful, often linked to multiple factors such as children's schooling, housing, and safety being perceived as substandard. [10] In this study, doctors were also least satisfied with the spouse's employment, schooling, and housing allocated by the government, which is consistent with other studies. A study in Nepal shows that healthcare professionals consider their career paths clearly to decide where to work. Political interference sometimes unfairly influences the policies, limiting the promotion process's effectiveness. [12,29] Lastly, the provision of post-graduation studies for those doctors who complete specified rural service periods is believed to be another incentive. [30] Nevertheless, it would be essential to investigate different other variables that might positively or negatively affect doctors' retention in rural areas.

LIMITATION

The study provides an overview of the on-field reality of the retention of doctors in rural India. One limitation is that this is a cross-sectional descriptive study and might not present a long-term trend. However, as discussed above, it has provided insight into areas for further research. Additionally, due to cultural and political variations across countries and regions, differences might occur in the interpretation of personal and professional components of the WHO framework. In recognition of differences in settings and context-specific implications, WHO advocates that countries will ultimately need to ensure that applications and relevance of policy options should fit these realities. [31]

CONCLUSION

The scarcity of HRH, mainly medical doctors in rural and remote locations, pose a severe problem. The study highlighted the doctors' intention to work and stay in underserved locations and their responses to WHO's four policy domains. There is a need to address the uneven distribution of doctors in rural and remote areas. Providing basic facilities like accommodations, electricity, telephone, and water supply play an essential role in rural communities. To meet the goals of SDG, India needs to recruit and retain medical doctors in rural and remote areas. Hence, the analysis of the WHO framework for rural HRH paves the way for understanding the nuances of improving human resources shortages in rural Odisha.

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CONFLICTS OF INTEREST:

There is no conflict of interest of any of the authors.

ETHICAL COMMITTEE APPROVAL:

Approval for this study was received from the Ethical Review Committee for Human Research, Faculty of Public Health, Mahidol University, Bangkok (COA No. MUPH 2016-094). This study was also approved by the Research

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