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Results from Qualitative Research

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Health, Nutrition and Population (HNP) Discussion Paper

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Health, Nutrition and Population (HNP) Discussion Paper

Health Worker Attitudes Toward Rural Service in India: *Results from Qualitative Research*

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Abstract: The paucity of qualified health workers in rural areas is a critical challenge for India's health sector. Although state governments have instituted several mechanisms, salary and non-salary, to attract health workers to rural areas, individually these mechanisms typically focus on single issues (e.g. salary). This qualitative study explores the career preferences of under-training and in-service doctors and nurses and identifies factors important to them to take up rural service. It then develops a framework for clustering these complex attributes into potential "incentive packages" for better rural recruitment and retention.

The study was carried out in two geographically diverse Indian states, Uttarakhand and Andhra Pradesh. A total of 80 in-depth interviews were conducted with a variety of participants: medical students (undergraduate, postgraduate, and Indian system of medicine), nursing students, and doctors and nurses in primary health centers. The information collected was clustered by constructing several hierarchical displays, and collated into job-attribute matrixes.

The findings indicate that, while financial and educational incentives attract doctors and nurses to rural postings, they do not make effective retention strategies. Frustration among rural health workers often stems from the lack of infrastructure, support staff, and drugs, a feeling exasperated by local political interference and lack of security. Mundane issues such as lack of water, electricity, education facilities for children, and connectivity increase dissatisfaction, while a primary care job commands little respect.

From a framework of multiple factors deterring rural service, we identified potential rural incentive packages for health workers. Our framework suggests that it is imperative to replace the single-issue approach by such a package approach. In particular, attention needs to be paid to both salary and non-salary incentives for successful rural recruitment and retention.

Keywords: human resources for health, india, rural area shortage.

Disclaimer: The findings, interpretations and conclusions expressed in this case study are entirely those of the authors, and do not represent the views of the World Bank, the Executive Directors, or the countries they represent.

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1. INTRODUCTION

The health sector in India faces multiple challenges in the geographic distribution of human resources for health. Though about one-third of Indians live in rural areas, the population-to-doctor ratio is much higher in rural than urban areas. Doctors in both the public and private sectors are concentrated in urban areas. While the public sector has made considerable efforts to place doctors (and a variety of other health workers) in rural areas, issues like absenteeism, "ghost doctors," and dual practice have compromised the effectiveness of this effort.

The distribution of private providers is also worrisome; one study estimates that over 80 percent of the qualified private provider market is concentrated in urban areas (WHO 2007). A related issue is the shortage of female doctors in rural areas (WHO 2007). Other categories of health workers are likely to be similarly maldistributed. The lack of qualified medical professionals in rural areas has resulted in the majority of rural households receiving care from private providers, many of whom have little or no formal qualification to practice medicine (WHO 2007).

One policy response to this situation is to strengthen the public sector presence in rural areas by ensuring that health centers are staffed according to government norms. In conjunction, the government can also look beyond the public sector and examine ways in which qualified private practitioners can be induced to work in rural areas. For either strategy to be successful, the key is to create the right incentive climate to attract health workers to rural postings.

Various salary and non-salary incentives play a part in why health workers typically choose not to serve in rural areas in India. Various studies have shown that salary is an important determinant of employment choice (Serneels et al. 2007; Ubach et al. 2007; Scott 2001); in the state of Uttar Pradesh, the difference in salary between the initial urban and rural posting for a recent graduate in the public sector is a mere Rs 100.

Non-salary factors are also important (Ubach et al. 2007; Scott 2001). These incentives cover a variety of dimensions such as living conditions, education opportunities for employees' children, and future career prospects. Clearly, any government policy to encourage health workers to opt for rural service would require offering a package of incentives that covers an array of salary and non-salary incentives.

1.1 STUDY OBJECTIVES

This study aims to understand the factors that motivate where health workers choose to work. It examines the job attributes that under-training and in-service health workers look for in a job, particularly in a rural job. Several cadres of health workers are studied—

medical doctors, AYUSH [1] doctors, and nurses. Within each of these cadres both graduating students and those in government employment are included.

Ethics approval for the study was obtained from the Public Health Foundation of India Ethical Review Committee. Funding for the study was provided by the World Bank.

1.2 METHODOLOGY

The study uses qualitative methods to understand the job attributes that under-training and in-service health workers consider important in choosing a job. The cadres included in the study—medical doctors, AYUSH doctors, and nurses—were chosen because of their role as primary care providers within the public sector in rural areas. Under-training health workers included graduating students in medical schools (undergraduate and postgraduate) and in undergraduate AYUSH schools, and nurses studying for the General Nursing and Midwifery (GNM) course. In-service practitioners included medical doctors, AYUSH doctors, and nurses. Further, to account for the recognized shortage of female practitioners and medical specialists in rural areas, the study purposefully sampled female undergraduate medical students and postgraduate students from the specific streams of medicine, surgery, pediatrics, obstetrics and gynecology, and anesthetists.

The study was conducted in the states of Andhra Pradesh (AP) and Uttarakhand (UK). These two states were chosen because: (i) both states have shortages of health workers in rural areas; (ii) they represent diversity in geographic location, i.e. AP is located in southern India while UK is in the northern part; and (iii) while AP has a large number of training schools/colleges for health workers, UK has few of them (Table 1).

Table 1: Training schools and colleges

	Andhra Pradesh	Uttarakhand
Medical (1)	33	4
Nursing (2)	210	3
AYUSH (3)	6	5

Sources: (1) http://www.mohfw.nic.in/Amedical.html;
(2) http://www.indiannursingcouncil.org/Recognized-Nursing-Institution.asp;
(3) http://indianmedicine.nic.in/.

Selection of medical, nursing, and AYUSH schools

The medical, nursing, and AYUSH schools were selected to represent a diversity of academic reputation and provide a mix of both public and private institutes. In the two study states, a listing of medical colleges stratified by public or private ownership was prepared. From this list, in each state two public medical schools (one high and one low

[1] Indian medicine systems such as ayurveda, unani, siddha, and yoga, together with homeopathy, have had a long history of existing alongside allopathic systems. These systems of medicine are collectively known by the acronym AYUSH.

ranking) and one private medical college were selected. In AP, one public and one private nursing school were selected from the same city/town where the sampled medical schools were located. Nursing schools attached to the selected medical colleges were given preference. UK does not have any government nursing college. In each state, one AYUSH school offering the Bachelor of Ayurvedic Medicine and Surgery (BAMS) degree was selected from the schools present in the district where the sampled medical college was located. A summary of the characteristics of the schools selected is shown in Table 2.

Table 1: List of medical, nursing, and AYUSH colleges

Location	Type of Institute	Public/ Private	Name of Institute
Andhra Pradesh			
Hyderabad	Medical	Public	Osmania Medical College
		Private	Deccan Medical College
	Nursing	Private	Owesi School of Nursing
	AYUSH	Public	Dr BRKR Government Ayurveda College
Kakinada	Medical	Public	Rangaraya Medical College
	Nursing	Public	Government School of Nursing
Uttarakhand [a]			
Dehradun	Medical	Private	Himalaya Institute of Medical Sciences
	Nursing	Private	Himalaya Institute of Medical Sciences
	AYUSH	Private	Uttaranchal Ayurvedic college
Haldwani	Medical	Public	Sushila Nayar Medical college

[a] Uttarakhand has no public nursing college.

Selection of medical, nursing, and AYUSH students

In-training health workers were limited to medical undergraduates (final year students and interns), postgraduate medical students, and final year GNM nursing and AYUSH students. This cohort was selected because they would be planning their future career options, including entering the job market.

In each medical and AYUSH college, undergraduate students were selected to ensure that the ratio of male to female students participating in the study was 1:1. In each state, six postgraduate students from a public medical college were selected to represent the specialties of gynecology and obstetrics, pediatrics, anesthetists, internal medicine, and surgery. A convenience sample of nursing students was selected. The total number of students selected under each category is shown in Table 3.

Table 2: Sample selected for in-depth interviews in the medical, AYUSH, and nursing colleges

	Public	Private	Total
Medical UG students	13	10	23
Medical PG students	11	8	19
AYUSH BAMS students	4	4	8
Nursing GNM students	4	8	12
Total	36	26	62

Selection of primary health centers

In each district where the sample medical college was situated, one or two primary health centers (PHCs) within 30–50 kms of the district center and having the full complement of staff in position (medical officers, AYUSH practitioners, and staff nurses), were selected. The sample PHCs are listed in Table 4.

Table 3: Primary health care centers selected in each state

State	District	PHC
Andhra Pradesh	Rangareddy	Moinabad Uttapal
	Kakinada	Thalarevu Gandipali
Uttarakhand	Dehradun	Khalsi Thano
	Haldwani	Dineshpur Kelakhera

At each of these PHCs, one MBBS doctor, one BAMS doctor, and one GNM staff nurse were interviewed. The total number of in-service health workers selected under each category is shown in Table 5.

Table 4: Sample of in-service health workers selected for in-depth interviews

State	Medical Officer (MBBS)	Medical Officer (AYUSH)	Staff Nurses	Total
Andhra Pradesh	4	4	4	12
Uttarakhand	5	4	5	14
Total	9	8	9	26

Data collection

A semi-structured questionnaire was used to conduct in-depth interviews. A team of two trained personnel—an interviewer and a recorder—conducted these interviews. These interviews were conducted mainly in English, but where appropriate Hindi or Telegu (the local language in AP) was used. (During translation a conscious effort was made to retain the essence of the questions.) The interviews were conducted within the institutions where the health workers were located but were conducted in private.

Prior to the interviews, all participants were given a document informing them of the main objectives of the study and how the information collected from them would be used. Respondents were informed that the data would be treated in a confidential manner and a verbal consent was obtained.

Given that the context of the interviews would be different for students and in-service health workers, separate interview questionnaires were developed for each group. The study questionnaire was pretested on a sample of medical and nursing students and minor revisions were made based on the observations. The questionnaires covered the following domains: (a) background information of the respondent (sociodemographics, residence, education); (b) their job preferences on graduating and reasons for their choice; (c) job attributes that are important to the respondent; (d) respondent perceptions about working in rural areas; and (e) job attributes that would be important for the respondent to consider working in a rural area.

Data recording and analysis

Prior to the interviews a structured matrix was developed (Table 6). During the interviews, the recorder took notes and filled in the matrixes based on the key themes and subthemes that were expressed during the interview. The interviews were also audio-recorded.

Table 5: Matrix outline for recording data during interviews

S. No.	Attribute	Sub-attribute	Current level	Desired level

Following the interview, the audio records were transcribed and, if necessary, translated. The transcripts as well as the audio recordings were used to fill in one matrix per interview. The matrix approach was used as it was assumed that it would facilitate comparison across, as well as within, groups or individuals, while avoiding excessive structure. It would also allow emergence of issues and opinions as expressed by the participants, without too much interpretation from the researcher(s).

Information contained in the interview transcripts was grouped according to the major categories that emerged—individual, organizational, and contextual attributes (Table 7 below). Within these broad categories, job attributes and sub-attributes were identified.

During the analysis, attributes and sub-attributes that were mentioned frequently or consistently were given more emphasis. Within each attribute or sub-attribute, the data were further analyzed to identify the current and desired level.

Because the identified attributes may not all be actionable by government policy, key informants from government were asked to rate how actionable each attribute was. This information, together with the importance given to the attribute by respondents, was used to reduce the attribute set to a smaller number of actionable and relevant attributes. This final set of attributes and sub-attributes, along with their levels, was used for a follow-up discrete choice experiment (DCE) study. The main focus of this DCE is to understand how effective alternative incentive packages are in retaining health workers in rural areas of India.

1.3 Limitations of the study

The focus of this study was to understand the motivations behind employment choice, specifically concerning service in rural locations. However, as will be discussed later, most undergraduates, and even some postgraduate students were focused on further education and had not given serious thought about the job market. Thus, their stated job preferences were most likely based on general perceptions rather than a thorough understanding of the job market. Moreover, most of the medical students in the study had little exposure to rural areas, which limited their ability to contextualize a rural job and its attributes. This may have also been an issue with some nursing and AYUSH students.

2. ATTITUDES OF STUDENTS AND IN-SERVICE PRACTITIONERS TOWARD RURAL SERVICE

2.1 Generic Framework: Perceived Attributes of Rural Service

From the data, a generic framework of attributes considered important by health care workers in taking up rural service was constructed. This framework clusters attributes into three broad categories—individual, organizational, and contextual attributes (Table 7). Attributes were grouped into this framework by an iterative process of compilation and finalized by taking a group consensus. Of interest is that many rural service attributes are organizational in nature and can be tackled through health system reforms.

Table 7: Perceived attributes of rural service (students and in-service): A generic framework

Individual	Organizational	Contextual
• **Age** • **Gender** • **Marital status** • **Need for respect/self-esteem** (recognition for work, sense of fulfilment, prestige of the job) • **Personal attitudes toward rural work** • **Familiarity with rural context**	• **FINANCIAL ATTRIBUTES** • **Salary** • **FACILITIES** • **Clinic infrastructure** (drugs, equipment, laboratories, ambulance) • **Physical work environment** (cleanliness, availability of water electricity, toilet, good furniture, good construction, private cabin) • **Support staff** (helping hands for working) • **Mentoring staff** (for advising and guiding) • **Workload** (fixed working hours, shift systems, adequate number of patients) • **ORGANIZATIONAL CULTURE, POLICIES AND MANAGEMENT** • **Regulatory policies** (to regulate absenteeism, punctuality of staff) • **Policies on leave** (ability to take leave when required especially emergency) • **Transfer policies and promotions** (transparent policy, time of service in rural area clearly stated, no political interference in transfers) • **Job security** (permanency of job, pensions) • **Management** (administration, bureaucracy) • **CAREER GROWTH OPPORTUNITIES** • **Learning opportunities on the job** • **Training opportunities** • **Research apportunities** • **Postgraduation opportunities**	• **Living facilities** (housing, electricity, water, access to the market, hygiene) • **Proximity to family** (near hometown) • **Children's development** (availability of good schooling, extra activities, future opportunities) • **Family's well-being and comfort** (spouse job availability, spouse career growth, support to parents) • **Security** (physical security, legal protection against political interferance) • **Connectivity** (transport availability, no sense of isolation) • **Social life** (entertainment facilities, social circle) • **Community type** (comfort and connect with the community, no language barriers)

Table 8 presents the organizational and contextual attributes by health worker type. The dark shade represents attributes that played out strongly during the interviews (in terms of both frequency and intensity), and the boxes with slanting lines represent attributes that were discussed but not with great emphasis.

Certain organizational issues figure prominently, such as salary, the need for good clinical infrastructure, and leave policies. In general, students emphasized career growth opportunities more and the in-service personnel emphasized organizational culture and management issues more. Both groups emphasized concerns about contextual factors pertaining to living in a rural area.

Table 8: Perceived attributes of rural service by health worker type

	Medical students (UG & PG)	AYUSH students	Nursing students	Medical doctors	AYUSH doctors	Nurses
ORGANIZATIONAL FACTORS						
Financial attributes						
Increase in salary	■	■	■	■	■	■
Facilities						
Good clinic infrastructure	■	■	■	■	■	■
Good physical work environment	■		▨	▨	■	
Availability of mentoring staff	■		▨	■		
Availability of support staff		■	■		■	■
Adequate work load	■	■	■	■	■	■
Organizational culture, policies and management						
Regulatory policies	▨	▨				
Policies on leave	■	■	■	■	■	■
Transfer policies (clear and transparent) & promotions	▨	▨		■	■	■
Job security			■		■	■
Management				■	■	▨
Career growth opportunities						
Learning opportunities on the job	■	■	▨			
Training opportunities	■	▨				
Research opportunities	▨	▨				
Higher education opportunities	■		■	■		
CONTEXTUAL FACTORS						
Living facilities	■	■	■	■	■	■
Proximity to family	■	■	■	■	■	▨
Children's development (education)	■	■	■	■	■	■
Family well-being and comfort	▨	▨	▨	▨	▨	▨
Security	■	■	■	■	■	■
Connectivity (transport)	■	■	■	■	■	▨
Social life	▨	▨				
Community type	■			▨	▨	▨

▨ Weak attribute ■ Strong attribute

2.2 ATTITUDES OF STUDENTS AND IN-SERVICE PRACTITIONERS TOWARD RURAL SERVICE

This section provides a discussion of key factors that appear to influence graduating student and in-service provider attitudes toward rural service. The discussion broadly follows the sequence of attributes in Table 8. Detailed tables of job attributes and their ranges (current and desired) for each health worker type included in the study are in the appendixes (Tables A1 to A5). The student sample consisted of medical (final year, interns, and postgraduates), final year AYUSH, and final year nursing students studying

for their GNM degree. Many of the interns and postgraduate students had for a brief period experienced service at a rural health center. The in-service provider sample consisted of medical officers, AYUSH doctors, and staff nurses. The attitudes revealed were as follows.

Salary is important (with caveats)

Students

Expectedly, students wanted substantially higher salaries if they were to take up a rural job. Medical students wanted twice as much as current levels. Interestingly, AYUSH students (AYUSH doctors posted at PHCs are hired on contract) mostly wanted parity with what medical doctors would receive as remuneration. Nursing students also wanted more (but less than medical students).

Several medical students expressed disappointment that that their peers in non-medical fields like engineering or business were getting paid at much higher levels within three to four years of completing their first degree.

> "Rs 25,000—very difficult with this amount after completion of 8.5 years of study. After diploma in private sector [other professions get] Rs 45,000 to Rs 50,000" (PG student, AP)

Several medical students were unhappy with the low pay scales of contractual doctors, who are placed at a lower pay scale than regular staff.

> "For contractual they should double the amount as both [contractual and regular staff] are offering same services" (Intern, AP)

For AYUSH students, the need to have a professional status and financial remuneration equivalent to that of MBBS doctors was important:

> "MBBS doctors make good salaries, but Ayurvedics are still struggling…" (AYUSH student, UK)

> "Salary should be according to the job (qualification and experience)...how dedicated I am to the job" (AYUSH student, AP)

Although salary was mentioned by most medical students, many felt that just a salary increase would not be enough, principally because of the greater importance of increasing knowledge and gaining experience at this stage in their careers.

> "Salary is not enough to compensate for lack of facility. Facilities are more important" (Intern, AP)

> "Salary is not an important criterion to motivate to work in rural areas at this stage [of my career]" (Intern, UK)

Few felt that current pay in rural areas was adequate. About one-third felt that current salaries were what they would expect to work in rural areas.

In-service practitioners

For in-service providers, salary was an important issue and featured prominently in their conversations. In general, in-service providers felt that they were underpaid. However, recently revisions in government service salaries have been announced, which favor government health providers.

> "Salary is not very good...but now it's better than before" (Medical Officer, UK)

> "Salary is very less in government than in private service" (Nurse, UK)

> "I can work in hilly area if there is work. I should not sit bored and salary should be appropriate" (Nurse, UK)

AYUSH doctors, who are on contract, were particularly disappointed at the salary they received for the work they did. Further, their salaries were considerably less than those of medical officers with whom they sought parity.

> "We do as much work as the permanent doctor...we should get at least that much ...sometimes even more" (AYUSH doctor, UK)

Another concern among in-service providers, particularly among those on contract, was the irregularity with which they received their salary.

> "We never get salary on time...got it after three months...what do we do for those three-four months" (AYUSH doctor, UK)

However, for several in-service providers, higher salaries were not adequate compensation for them to serve in remote areas.

> "I will not go (back to the rural area) even if they increase salary...due to children and family" (Medical Officer, UK)

Further, higher salaries were perceived as being able to motivate certain, particularly younger, providers to work in rural areas.

> "Increasing salaries will attract the younger generation to serve in the rural areas" (Medical Officer, UK)

Need "facilities" to be useful as professionals

Students

One of the biggest issues that medical, AYUSH, and nursing students had with working in a rural area was the perceived lack of infrastructure (staff, drugs, equipment, diagnostics, physical structure of the health center) to treat patients. For medical students having a good physical work environment (e.g. clean surroundings, good furniture) and having mentors was important but not so for the other cadres. Availability of adequate support staff and having an appropriate workload was important to all student cadres.

> "It is not about not working in a rural health center—we can certainly work. But what was happening was, we were just looking at the cases and referring them. That was the only thing we were doing. If some facilities were provided we would even be interested in managing the case. Those poor people would be expecting a lot from us" (Intern, AP)

> "Very poor working conditions, very poor infrastructure… no job satisfaction…you feel frustrated…single person sitting idle in a single room" (Postgraduate student, UK)

The condition of the work place also mattered; having a clean, well-furnished place was essential.

> "Smelly, without AC, without desk…broken chair….place is not alluring" (Medical student, UK)

> "PHC was in bad condition…rooms were empty…syringes thrown all around" (Intern, AP)

Many nursing students felt that the work-load in rural areas was high. This was because health facilities were usually understaffed and they had to do the work of other staff as well.

> "Workload should be divided. There should be proper classification of work and not too much burden/tension" (Nursing student, UK)

> "24 hours duty will be there and there will be no shift wise duties but there is only one nurse and one doctor and work will be more" (Nursing student, AP)

Another worry for nurses was that doctors were often not present in health facilities and they had to handle patients. The nurse was forced to take decisions for which he or she was not adequately trained.

In-service providers

An important issue with in-service providers was the poor facilities with which they had to perform their jobs. Poor health center infrastructure, irregularity in the supply of drugs, and inadequate equipment constrained them.

> "No supply of drugs on time. The patients are interested, we are interested the government is not at all interested." (Medical Officer, AP)

> "Stock comes once. Then it gets late. The patient has to go elsewhere for testing. I had to perform delivery without electricity." (Nurse, UK)

For AYUSH doctors, the lack of AYUSH medicines inhibited their ability to practice their system of medicine.

> "We can't demand what we want [but] have to take the set medicines even if we don't use them." (AYUSH doctor, UK)

Most of the respondents mentioned that there was a need for properly trained staff at health facilities. The lack of adequate staff increased their workload.

> "Single doctor not sufficient for PHC. Also need another staff nurse. This is especially because patients begin to complain about the long waiting time." (Medical Officer, AP)

For nurses the lack of staff, particularly doctors, was particularly problematic because it shifted clinical responsibilities to themselves even though they were not adequately trained.

> "Medical officers must be there. We follow instructions and cannot take decisions on patient health." (Nurse, AP)

Nursing students, but not medical and AYUSH students, preferred government service

Students

Few medical and AYUSH students felt that working in a rural area had any advantages. Those from rural backgrounds felt that being able to serve their own communities was an important service. In general, medical and AYUSH students preferred an urban, private job.

Nurses were keen on getting a government job, because they saw it as a permanent job, making most other factors less consequential. Most were willing to work in rural areas, if offered a permanent government job. However, the preference for a government job could also be because it offered better private sector opportunities in the future.

> "In private hospitals there will be lot of work and there will be 24 hours service and the job is not permanent. In the case of government job there is a chance to do post-basic and we will get monthly salary and there is a chance to study higher in the case of government job." (Nursing student, AP)

> "Government job experience certificate has more value. It is easier to get other jobs afterwards (after the contract ends)." (Nursing student, AP)

Some nursing students who were keen on going abroad felt that a government job would give them a clear advantage for securing a high-paying job abroad.

> "Working in a government hospital gives better prospects for going abroad." (Nursing student, AP)

The importance of a transfer policy

Many in-service providers expressed the need for having clarity in the following: process for taking leave, transfer policies, rotational policies for rural postings, job description, and line of reporting.

As expected, many felt that they should get more leave annually. Medical officers in both states were concerned about the lack of clear-cut transfer policies. According to them, if the posting in rural or difficult areas was going to be for a fixed term with guaranteed transfer after this, there was a greater likelihood of attracting more doctors to work in

rural areas. Respondents also mentioned the need for having fixed working hours. Leave and transfer did not figure prominently among nurses.

> "Transfer policies should be transparent and very specific."

> "Placing new doctors at remote PHCs and giving them the security/(assurance) that they will be transferred after a definite period/or given postgraduate seat and place experienced (8–10 years' experience)/senior doctors at the headquarters of the remote area would be good." (Medical Officer, UK)

> "After completing three years of rural service the government must assure transfer of doctor. Must be shifted to town. Streamline processes so more people opt for this." (Medical Officer, AP)

The need for postgraduate specialization among medical students

Many MBBS students felt that they were inadequately trained to treat patients. They felt the need to have some guidance and handholding by senior mentoring staff. Importantly, all medical students aspired to further specialize. However, postgraduate students felt that they were too overqualified to work in a primary health center (typically the first posting for a doctor joining government service). Hence the desire to specialize precluded medical students from serving in rural areas after their MBBS degree.

> "MBBS is such that we are not qualified fully with anything. Need at least a postgraduate degree." (Intern, AP)

> "In rural areas, would be sitting alone and not doing more than five or six tests…three years of postgraduation education would be a waste." (Postgraduate student, UK)

Further learning opportunities

Many medical students expressed a fear of intellectual stagnation if they worked in rural areas. Although they might get a variety of cases, they believed that their learning would be limited by infrastructure, lack of seniors to guide them, and limited exposure to new technologies.

> "See, the main thing is in rural areas, once you go there it should not become a dead end, as far as learning is concerned. That is the main fear." (Intern, AP)

> "In rural areas the chance to apply learning is less… I would like to practice new technologies." (Medical student, UK)

> "This is a very competitive world. We should be updated with all the new things, what is going before us and behind us. In a government job we don't have this opportunity. We don't have opportunities to attend day to day seminars, conferences." (Postgraduate, AP)

Insecurity

Students

Medical students were apprehensive of their personal safety in rural areas. While this was partly due to their lack of rural exposure, other factors such as events reported in the media and experiences of colleagues had created a sense of vulnerability associated with rural jobs.

> "In rural areas, people hardly give you any time to explain why you did (what you did)…they will come and bash you, thrash you." (Medical student, UK)

> "I am a lady and mainly I want security. In government hospitals also we are not able to handle patients in drunken condition and arrogant people." (Intern, Female, AP)

For nursing students personal security both at the workplace and at home was important.

> "In the village if anything happens to the patient, the surrounding people will not understand what really happened there and they may shout and they may also beat us." (Nursing student, AP)

> "Good accommodation, security, colleagues/known people staying together is important." (Nursing student, UK)

In-service providers

Several medical officers expressed a need for security, including physical safety at night and the safety of women.

> "Unsafe, especially at night." (Medical Officer, UK)

> "Safety of female doctors needs to be ensured." (AYUSH doctor, AP)

> "It is unsafe if you are the only staff at night. It is safer if other staff like sweeper, doctor, pharmacist, watchman are staying in the same campus." (Nurse, AP)

Political interference

Medical students detested interference from local politicians. For many it was a big deterrent in considering a rural job. AYUSH and nursing students expressed no views on this.

> "In some situations, in the hospital itself, we get calls from higher authorities…there will be certain situations when we are forced to do things which we don't want to. That is where we become very disappointed. I don't want such a kind of job." (Postgraduate, AP)

> "Political interference should be avoided. For example, Auxiliary Nurse and Midwife trainee should be selected by merit. There the local body entered into the field and said you suggest this person—they are taking money from them and demanding us to select." (Postgraduate, AP)

> "In rural areas political involvement along with media can malign a doctor's reputation." (AYUSH doctor, AP)

> "Harassment by local politicians, some problems with local politicians. Local sarpanch and local leaders misbehave sometimes." (Medical Officer, AP)

Poor image of PHC doctor and nurses

Rural doctors have a low image among medical students. Their perception is that rural postings are taken up by those who are left with no other option, i.e. to specialize further or work in an urban area.

> "The PHC doctor is looked on as if he has no option, he is taking (a job) for the sake of reservation [for postgraduate studies] or something else." (Intern, AP)

> "I think recognition is one point. Generally a PHC working doctor is considered inferior by a doctor in urban areas. A PHC doctor needs more recognition than urban doctors. They are providing more service for less money." (Intern, AP)

Nursing students felt very sore about the fact that even after working so much and taking additional responsibilities, the image of a nurse in society was low. They felt a difference between the respect that a doctor commanded, irrespective of how regularly he/she attended clinic, and what the nurse got, despite her (or his) constant presence in the health facility.

> "So people say that the doctor is not giving treatment but the nurse is giving treatment in the hospital. So nurses must have designation. I want to work in a place where there is designation and respect given to the nurse." (Nursing student, AP)

> "We must have designation and they (patients) should give respect to us." (Nursing student, AP)

Being close to the family and educating children

Students

Expectedly, being close to their family was important for most students in a future job. Proximity meant working in the same area as their families lived or being able to physically live with their families.

> "You cannot expect your wife somewhere else and your children somewhere else and working there alone." (Intern, AP)

> "If they provide placement in the same district it is better to do the job." (Medical student, AP)

> "If I get good school for my children I don't mind staying in rural area longer, but not permanently." (Postgraduate student, AP)

In-service providers

The availability and quality of schools for children emerged as an important factor deterring providers from living in rural areas with their families. Issues with schools included the type of students who attended, the quality of the teaching, and the schools' infrastructure. Interestingly, there was an overwhelming demand for private schools teaching in English.

> "Very poor standard of education for children: in today's competitive environment, the standards of schools in rural areas aren't up to the mark." (Medical Officer, AP)

> "Level of education not so good, teachers not good." (Medical Officer, UK)

> "Children are made to sit on the floor, timings are bad... children have to go walking to school if the house is distant … if there is a school bus for all staff children, then children will be able to go and come conveniently." (Nurse, AP)

Difficulties of rural life

Students

Students often regarded housing provided to rural health workers as poor. They thought that basic facilities like 24-hour water and electricity, good sanitation, and clean surroundings were rarities in rural areas. Students were hesitant about staying alone, and quarters with other colleagues appeared appealing. Some considered staying in an urban area and were willing to travel a reasonable distance (20–40 km) daily to their rural health facility.

> "We should not be alone over there. In such a remote area, as girls we don't feel safe." (Intern, AP)

> "In very rural areas, no accommodation is available…if government provides accommodation (it) would be good." (Medical student, UK)

> "Currently no water, may be electricity available, housing in bad condition…you cannot live…no TV…or no cable if TV present." (Medical student, UK)

Living in rural areas was also associated with a lack of social life among medical and AYUSH students. This is not surprising since most of them were from urban backgrounds.

> "Basic amenities such as good theatre, good restaurants, good family life." (Postgraduate, UK)

> "Adjustment is difficult in a rural area… it is difficult to (establish) rapport with villagers." (Intern, AP)

> "No social life…if you want to relax in the evening…you do not know where to go…" (Medical student, UK)

Transport in rural areas and associated connectivity was a concern for the majority of students.

> "No autos are there. We have a road to our village and one bus; sometimes it comes and sometimes it won't." (Nursing student, AP)

In-service providers

In general, in-service providers were dissatisfied with their living conditions. Providers reported decrepit living quarters, and lack of water and electricity.

> "Totally collapsed [quarters], no water no electricity, water needs to be carried." (Medical Officer, AP)

> "Water is not there and the building is also no good and it is in a collapsed state." (Nurse, AP)

Many respondents expressed concern about the lack of availability of proper transport to commute between their home and the health center. Problems included infrequent public transport, bad roads, and poor connectivity to other areas. For several health workers, poor transport was responsible for them being far from their families.

> "Bad roads. Can't travel at odd hours, local transport times are fixed...does not match with our time." (AYUSH doctor, UK)

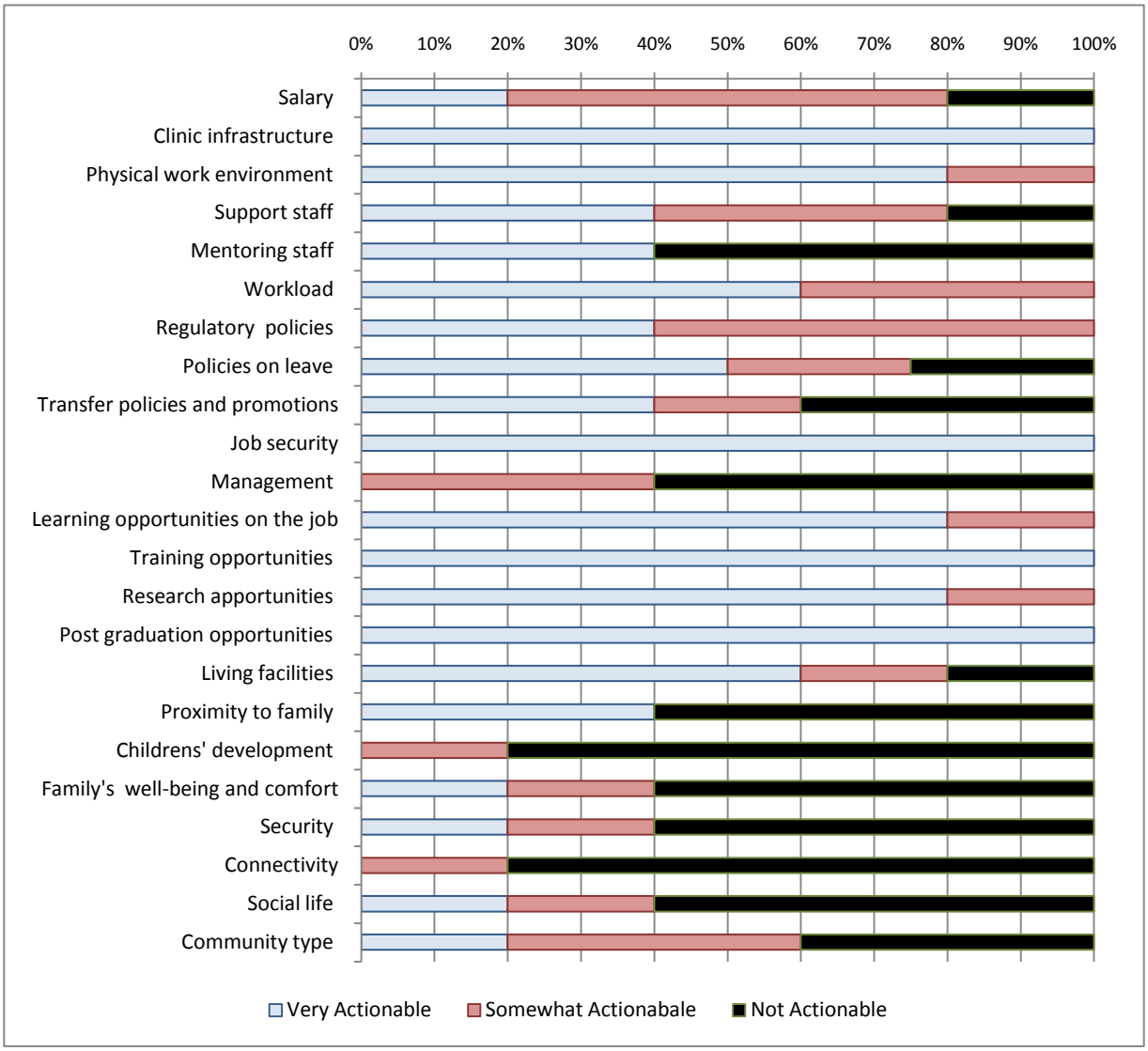
3. TOWARD A DISCRETE CHOICE EXPERIMENT

In this section a set of operational job attributes for a DCE are extracted from the identified attributes (Table 8 above) of a rural job. The process involved purposefully selecting those attributes that could be influenced by government policy in the short to medium term and that were frequently mentioned by the respondents (i.e. strong attributes). From this reduced list, similar attributes were combined.

3.1 POLICY-MAKER VIEWPOINTS

Senior bureaucrats within the Health Department, Government of Andhra Pradesh and the Ministry of Health and Family Welfare (MOHFW) were consulted to get their opinion on how actionable the attributes identified in Table 8 were. Five key informants—two from MOHFW and three from Andhra Pradesh—were consulted. Key informants were asked to rate (as "very actionable," "actionable," "not actionable") the extent to which the identified attributes were actionable by government policy. Table 9 presents the results from this exercise.

Table 9: Policy-maker opinions on job attributes actionable by government policy



Among the organizational attributes, key informants felt that the *salary* level was difficult to change, given that it is set and revised for all government employees through pay commissions. However, incentives could be given over and above the base salary, a strategy being followed in several states. All key informants felt that *clinic infrastructure* and *physical work environment* were important and actionable. Most informants also felt that a formal program of *mentoring* of new recruits was not practical, though they also believed that it was possible to create an induction training course to orient and improve confidence of new recruits.

Key informants regarded *workload and job security* as highly actionable, feeling that, while the patient load could be regulated, the number of working hours could be fixed by having a shift system. Currently, the workload and expectations from a PHC doctor were high and he or she was expected to be available 24 hours a day. Moreover, job security

existed only in the government sector. Key informants had diverse views on how actionable *leave and transfer policies* were. Some felt that increasing the amount of leave was not feasible, though taking leave could be made easier if the process was simplified. Further, some key informants felt that major changes in the process of taking leave and transfers was not possible because this was where illegal payments within the health system were generated. Key informants felt that creating opportunities for *learning, training, research, and postgraduation opportunities* was very actionable. Informants from Andhra Pradesh reported that the current practice in their state of reserving postgraduate seats for those serving in rural areas was a big incentive.

Among the contextual attributes, improving *living facilities* of health workers was considered fairly actionable. Surprisingly, most key informants felt that *proximity to family* was not actionable. However, those who did think it was highly actionable thought it could be achieved by locally recruiting health workers and through a counseling process in which health worker location preferences are given importance. All these policies are currently practiced in several states. However, they did not regard attributes like *children's education*, *connectivity (transport)*, *security*, and *community type* as actionable because they fell outside the purview of the health department.

3.2 Job Attributes for the Discrete Choice Experiment

As noted, the results from this qualitative study were used to inform the design of a DCE. The main focus of the DCE is to understand how effective alternative incentive packages are in retaining health workers in rural areas of India. Based on the frequency with which attributes were cited in health worker interviews, information from the policy maker ratings on how actionable an attribute is and consolidating similar types of attributes resulted in seven attributes being identified (Table 10). Note that we have deliberately refrained from specifying "rural" or "urban" as a job attribute because these could mean different things to different people (Box 1). For example, a rural health center within an hour's commute from an urban center might not be considered as rural. To give a sense of where the job is located we defined the location in terms of housing and educational facilities for children and if it was well connected or not. We also avoided using the term "government" or "private" job. Because there were several contextual attributes, their levels are presented as a description to give a better sense of the area in which the job is located.

Box 1: What is rural?

One of the important findings from this study was that the word "rural" was not necessarily associated with hardship. For most health workers, postings in rural areas but within a reasonable commute to an urban setting were much sought after. Postings in rural areas that were not well connected, lacking education facilities for children, and with poor living conditions in terms of housing, drinking water, and electricity were undesirable postings. When health workers spoke of rural areas they meant places lacking these desirable attributes. This highlights the importance of describing location in terms of such attributes and we have incorporated this when defining levels of location attributes for the discrete choice experiment.

Table 10: Discrete choice experiment attributes

	Attribute	Levels
1	Type of health center	1. Clinic 2. 20–30 bed hospital 3. 50–100 bed hospital
2	Area	1. Located in a well-connected place, having good education facilities for children and good quality housing provided 2. Located in a well-connected place, having good education facilities for children but poor quality housing provided 3. Located in a poorly connected place with bad education facility for children but good housing provided 4. Located in a poorly connected place with bad education facility for children and poor housing provided
3	Health center infrastructure	1. Well maintained building, adequately equipped with few shortages of supplies and drugs. 2. Building in poor condition, inadequate equipment, and frequent shortages of supplies and drugs
4	Staff	1. Fully staffed and moderate workload 2. Few staff and heavy workload
5	Salary (including allowances, Rupees per month)	Doctors: 30,000 45,000 65,000 80,000 AYUSH: 15,000 25,000 40,000 50,000 Nurses: 10,000 15,000 25,000 30,000
6	Change in location to city/town	1. On completion of 3 years 2. Uncertain
7	Professional development	1. Short duration training courses for skill development 2. Easier admission to PG after 3 years of service in same job through reservation/quota.
8	Job location	1. The job is located in your native area 2. The job is not located in your native area

Type of health center was added to the attribute list because health workers viewed a job in a clinic differently from that in a hospital. The three types of health facilities represent the generic type of public sector health facilities in rural areas but they are easily translatable into the types of health facilities in a private setting.

For the *area* attribute, three sub-attributes were used to define the location of the job: connectivity (in terms of transport), housing available to health workers, and educational facilities available to children of health workers. Each of these three sub-attributes had two levels (good and poor). We arrived at the four levels by looking at all possible combinations of these three sub-attributes and identifying those combinations that were plausible. In addition, we assumed that places with good connectivity would also have

good educational facilities for children in the sense that children of health workers would be able to travel to a good school even if one was not locally available. This also implies that areas with poor connectivity would have poor educational facilities for children. This in effect reduces the number of sub-attributes to two because good education and good connectivity always occur together.

For the *health center infrastructure* attribute, two sub-attributes define the condition of infrastructure: building maintenance, adequacy of equipment and availability of drugs and supplies. This attribute has two levels—facility infrastructure was "good" when all three sub-attributes are positive, and "poor" when all three were negative. In effect, the same levels of these three sub-attributes occur together.

The *staff* attribute is defined by two sub-attributes: adequacy of staff and workload. Two levels define this attribute—fully staffed facilities and moderate workload, and few staff and heavy workload.

The *salary* attribute levels are from what was reported in the qualitative interviews. The minimum and maximum are the highest and lowest reported salary levels. Identifying salary levels of health workers was problematic because of the different types of health workers involved in the study. For example, there was little overlap between the salary levels of nurses and doctors. This required specifying separate salary levels for health worker types.

The *change in location to city/town* attribute had two levels: after three years of service in the current post, and no specific time for transfer ("uncertain"). The latter represents current service rules in public health sector jobs.

The *professional development* attribute had two levels: short training courses offered as part of in-service training, and reservation for postgraduate studies after completion of three years of service. The latter is what some states typically offer to incentivize rural service.

The *job location* attribute had two levels: the job posting is in an area (village, district, town) where the responded grew up or belongs (i.e. native area), and posting to a non-native area.

REFERENCES

Scott, A. 2001. "Eliciting GPs' Preferences for Pecuniary and Non-pecuniary Job Characteristics." *Journal of Health Economics* 20 (3): 329–347.

Serneels, P. et al. 2007. "For Public Service Or Money: Understanding Geographical Imbalances in the Health Workforce." *Health Policy and Planning* 22: 128–138.

Ubach, C., A. Scott, et al. 2007. "What do Hospital Consultants Value about their Jobs: A Discrete Choice Experiment." *BMJ* 2003, 326: 1432.

WHO. 2007. "Not Enough Here…Too Many There….: Health Workforce in India." Country Office for India.

APPENDIXES

Table A1: Attitude of medical students toward rural practice

ATTRIBUTE	MEANING	CURRENT LEVEL	DESIRED LEVEL
ORGANIZATIONAL FACTORS			
Financial attribute			
Salary	Increase in payments, payment on time	Rs 30,000–50,000/month (after UG), Rs 50,000–80,000/month (after PG). (In general, students did not have a clear idea of salaries.)	Rs 50,000–80,000/month (after UG, one or two students wanted >1 lakh), 1–1.5 lakh/month (after PG)
Facilities			
Clinic infrastructure	Equipment like X-ray machine, suction, IV, lab facilities, adequate variety of drugs, ambulance services, beds	Drugs and modern equipment not available. Helpless to save lives. Do not fulfill their function in the rural facility, even by being there. Few primary drugs, often outdated, which in an emergency might also not be available	Facilities to manage cases available. Accessible lab/diagnostic facilities. Standard equipment (X-ray, ECG, OT equipment) present. Adequate beds for patients to stay. Ambulance facilities
Physical work environment	Private room, toilet, good furniture, clean hygienic atmosphere	Physical work environment often smelly and unhygienic. No air-conditioning or good furniture. The availability of toilets with running water is an issue	Separate chamber for the doctor to treat patients with privacy. Congenial atmosphere, well-furnished with a table, chair, etc. Clean and mosquito-free
Mentoring staff	Seniors, more experienced doctors present, specialists to discuss their cases	Doctors wary of making a life-threatening mistake, in the absence of guidance. No one to correct mistakes, no colleagues to discuss their cases with	Young doctors like a senior to guide them. Regular consultation with specialists once a week at PHC or over phone helpful. Young doctors posted in groups
Support staff	Adequate supporting workforce—nurses, laboratory personnel, pharmacist	Support staff often absent and doctor left to do work. Some resented administrative work. Sometimes support staff was not cooperative	Adequate numbers of support staff must be present, staff must cooperate with the medical personnel and their attendance must be good
Work load	Not too little and not burdensome, variety of cases. Challenging work	Restricted to same kind of cases. Work was physically strenuous but not intellectually challenging—restricted to ailments like cold and fever	Doctors wanted a more intellectually challenging job than only primary care which was fine for a short time period (1–2 years)
Organizational culture, policies and management			
Regulatory policies	Regulatory policies of the government, checks on punctuality, absenteeism and attendance	Current policies in rural government jobs not adequate. Some got away with just "signing in" and not doing any work, which was unfair to others. Support staff management was also poor	Uniform disciplinary measures in the system. Existing regulatory policies must be implemented well
Policies on leave	Annual leave, ability to take leave when desired/during emergency, total leaves	Taking leave a highly bureaucratic process. Leave taken formally takes time to get sanctioned, and this time-lag becomes a hurdle during emergencies	Doctors in the rural areas must be allowed to take leave whenever there is an emergency
Transfer policies and promotion	Political interference in transfers, time frame in rural area often not specified	Transfer policies unclear. Timeframe when students are eligible for a more urban option indicated. Political interference—some made to do the rural stint, others not	Transparent transfer policies applying to everyone desired. Timeframe of work in rural area must be specified
Career growth opportunities			
Learning opportunities on the job	Practice existing skills, apply all the knowledge acquired during their degree	On the job learning opportunities at a primary care level limited. Basic cases encountered, practice of skills, professional "development" comes to a "dead-end"	Less of strenuous work, more intellectually stimulating work. PHC must be linked closely to a tertiary center so that learning doesn't stop
Training opportunities	Structured pre- rural service training, on the job training	May not be familiar with the rural scenario or endemic diseases	Pre-service training on endemic diseases, nutrition. One/month training on "dealing with various situations" in rural setup

Research opportunities	Updates, conferences, opportunities for doing research	In urban areas, they were constantly aware of new drugs, equipment, new updates in medicine. In a rural area, exposure became limited.	Attend conferences, network. Professionally updated, research opportunities provided. Internet, magazines, journals and computers access
Postgraduation opportunities		Mentioned in Andhra Pradesh, where such a scheme existed. People who completed 3 years of rural service were given PG opportunities	3 years was too long a duration. Rural posting must be done after their PG and not after undergraduation
CONTEXTUAL ATTRIBUTES			
Living facilities	Housing, water, electricity, market nearby	Housing conditions in rural areas poor, furnishing not good, no fans, power scarcity and water not available for 24 hours. Unhygienic and poor sanitary conditions. No supermarkets for getting daily needs nearby	Quarters within/close to PHC premises. Also, 24 hours water, electricity, cemented house, 2–3 rooms, toilet, fridge, heating/cooling systems, mosquito control and sanitation. Availability of shopping facilities
Proximity to family	Close to home-town, belong to same native village	Even if placed in a rural area, would like to stay in the proximity of family. Currently, not given the choice of taking up a rural area in the same district they belong to	Given travel allowance to visit family if home town far away. Posting within the same district as home town preferred. Family contact easier, language and community acceptance barriers are lower
Children's development	Education, opportunities, extracurricular activities, future of next generation	Schools not good, teaching quality poor (teachers not qualified). English-medium schools not available, extra-curricular activities restricted, rural atmosphere not safe and healthy for children, children's future opportunities restricted	Good, competitive, private schools, with extra-curricular activities. English medium education, within 10 km radius. Provision of subsidized education for children in good facilities in a hostel set-up but staying together preferred
Family well-being and comfort	Spouse job, family adjustment to rural area, parents support possible, infection risk to family	Spouse's job an issue. Do not want to live separately from families. Elderly parents need support and access to medical facilities not available in rural area. Fear risking the family to infection (esp. young children)	No specific suggestions. Medical insurance for self and family can be considered
Security	Physical security, protection from community violence	Particularly female doctors face security issues at/after work. Doctor cannot handle drunk patients and relatives. If patient dies in the hospital, community blames death on the doctor and resorts to violence	Local security at work place and after work hours. Guards provided. Women must not be posted alone. Support of local self-government sought to ensure doctors' safety
Connectivity (transport)	Isolation, poor transport, vehicle provision, availability of roads	Poor road conditions, not well connected with the urban area, public transport lacking	Transport facilities present. Well connected by road to nearby towns. Car given. Willing to travel daily to remote area from nearby town (up to 10–15 km)
Social life	Entertainment, circle of friends and neighbors	Entertainment (restaurants, malls, movies) restricted in rural areas. No friends circle around, and might be isolated	No specific suggestions. Posting more than 1 doctor at one place might help
Community type	Poverty, illiteracy, doctors connect with people, language barriers	Community they live in and serve different in rural areas. Might not be able to build a rapport with them	Doctors felt the need for general awareness programs and overall rural development

Table A2: Comparison of perspectives of AYUSH students with medical students

ATTRIBUTE	MEANING	CURRENT LEVEL	DESIRED LEVEL
ORGANIZATIONAL FACTORS			
Financial attribute			
Salary	Increase in payments, similar payment as allopathic doctors	Rs 15,000–35,000/month (In general, students did not have a clear idea. They knew salary was less, but were mostly guessing figures)	Rs 15,000–45,000/month (wanted equal pay as MBBS doctors)
Facilities			
Clinic infrastructure	Similar to MBBS, except that AYUSH doctors wanted access to a variety of AYUSH drugs also		
Physical work environment	Not mentioned by AYUSH students		
Mentoring staff	Not mentioned by AYUSH students		
Support staff	Similar to MBBS students		
Work load	Similar to MBBS students		
Organizational culture, policies and management			
Regulatory policies	Similar to MBBS students		
Policies on leave	Similar to MBBS students		
Transfer policies and promotion	Similar to MBBS students		
Career growth opportunities			
Learning opportunities on the job	Similar to MBBS students		
Training opportunities	Similar to MBBS students but weaker		
Research opportunities	Similar to MBBS students		
Postgraduation opportunities	Not mentioned by AYUSH students		
CONTEXTUAL ATTRIBUTES			
Living facilities, Proximity to family, Children's development, Family well-being and comfort, Security, Connectivity (transport), Social life	Similar to MBBS		
Community type	Not mentioned by AYUSH students		

Table A3: Attitudes of nursing students toward rural service

ATTRIBUTE	MEANING	CURRENT LEVEL	DESIRED LEVEL
ORGANIZATIONAL FACTORS			
Financial attribute			
Salary	Increase in payments, were even willing to go for same payment if job was permanent	General range: Rs 4,000–12,000/month. (two students mentioned Rs 20,000–25,000) *In general, students did not have a clear idea. They knew salary was less, but were mostly guessing figures.	Rs 15,000–25,000/month (two students mentioned Rs 30,000–40,000). Nurses were willing to go to rural area for same salary if job was permanent.
Facilities			
Clinic infrastructure	X-ray machine, suction, lab facilities. Life-saving equipment. Drugs, ventilators, ambulance services	Drugs and modern equipment not. Few primary drugs available are often outdated. Sometimes, when a patient needs life-saving equipment, these may not be available. Less equipment in rural areas than in urban areas	Good facilities, ambulance facilities must be available for patient and for nurses. Drugs, doctor present 24 hours a day, lab facilities, adequate beds. The facility must have 24 hours service for patients
Physical work environment	Clean and hygienic environment, good furniture	Sanitation in the hospitals is an issue. Drainage near hospital, mosquito menace	Center must have basic facilities like a table, chair, private room
Support staff	Adequacy of number of support staff and doctors	Nurses were often not enough in number and workload became too much. Doctors were often not available, and they had to handle cases that are beyond their ability on their own.	Adequate number of doctors, staff at hospital at all times, good coordination among staff
Work load	Not too burdensome, shift system, work hours	Nurses have to handle a huge work load. Often had to work for 24 hours continuously, if there is no replacement staff	Shift system of 6–8 hours. Clear job responsibilities, fixed working hours
Organizational culture, policies and management			
Policies on leave	Ability to take leave when desired	Current levels not enough	Nurses in the rural areas must be allowed to take leave for urgent work or at the time of a festival. 3–5 leaves a month
Job security	Government job more value, permanent job, pensions,	Often in private hospitals, the nurses' job is not secure, their experience there in not valid and the work load is more. Government job has more value better prospects	Government job is permanent, pensions are available and workload is less, more time with family, preferred to private jobs
Career growth opportunities			
Learning opportunities on the job	Practice existing skills, apply knowledge	Nurses sometimes felt that rural jobs did not offer the same intellectual stimulation and exposure that urban jobs offered	Wanted a job where knowledge level will increase, continue education in the job, more learning opportunities

CONTEXTUAL ATTRIBUTES			
Living facilities	Housing, water, electricity, market nearby, recreation facilities	Often no quarters were not available if there were, they were in bad condition. No water, electricity, no markets, banks and ATMs, no television, theatres	Available with electricity, water supply, near hospital premises so that emergency cases could be attended to, One room, bathroom, kitchen, storage, good drainage, food facilities. Availability of a food mess, recreation facilities, theatres
Proximity to family	Close to home-town, belong to same native village	Even if placed in a rural area, nurses would like to stay in the proximity of family. Currently, nurses were not given the choice of taking up a rural area in the same district/area they belong to. Work in rural areas means they have to live away from families	Posting within the same district as family would be preferred. Should be able to visit family 2–3 times a month
Children's development (education)	Education, opportunities, standard of schools	Schools not good in rural areas	No specific suggestions. Nurses felt that the quality of schools was better in urban areas
Family well-being and comfort	Proximity to spouse, family and parents	Felt that work in rural areas meant staying away from spouse who may have a job elsewhere, parents and the family. Post marriage this is an issue, husband may not approve of the location	No specific suggestions. Like to be transferred to the same place as he spouse, not an issue before marriage
Security	Physical security	Possibility of problems at night, afraid of working alone	Presence of a security guard, assistant. Need to have colleagues to work with—not alone

Table A4: Attitudes of in-service Medical Officers and AYUSH doctors toward rural service

ATTRIBUTE	MEANING	CURRENT LEVEL	DESIRED LEVEL
ORGANIZATIONAL FACTORS			
Financial attribute			
Salary	Increase in payments, comparative salaries private practice	Allopathic in service doctors: Rs 20,000–40,000/month (1 person mentioned 15,000) AYUSH in-service doctors: Rs 9,300–15,000/month on contract basis, Rs 20,000–28,000/month (more in remote areas)* * (one or two extreme values not considered)	Allopathic in service doctors: Rs 50,000–60,000/month, AYUSH in-service doctors: want as much as MBBS doctors. Desired: Rs 25,000–50,000 per month. Would not go to remote areas irrespective of the salary package. Felt that as they grew older, must get postings near urban and semi-urban areas
Facilities			
Clinic infrastructure	Modern equipment, labor room, telephone, operation theatre facilities, oxygen	Drugs and modern equipment not available in the hospital. Vehicle is only available during camps. Supply of medicines was not enough. AYUSH drugs not available	Facilities to manage different types of cases must be available
Physical work environment	Furniture, electricity, hygiene, separate room	Currently not given a separate room, often made to sit with nursing staff (whereas the allopathic doctor was given a room)	Allopathic doctors asked for good furniture, availability of bathroom, proper separate AYUSH wing, room to sit and keep medicines, good furniture
Support staff	Adequate supporting staff -nurses, laboratory personnel, pharmacist. Also, adequate number of doctors	Support staff often absent and the doctor was left to do all the work. Resented PHC related administrative work Single doctor has to work for 24 hours, doing night duty	Adequate numbers of support staff, minimum 2 doctors at PHC. At least 1 lady doctor present. Separation of clinical work and administrative work. Support staff better trained and cooperative
Work load	Night duty, large number of cases, patient waiting for long time, administrative responsibilities	Closely linked with the "support staff" attribute in case of in-service workers. Administrative work a problem, single doctor has to work for 24 hours. Sometimes there are more than 100 patients in the OPD	Same as above
Organizational culture, policies and management			
Policies on leave	Annual leave, total number of leaves	Currently, in addition to government holidays, 14 CL and 31 EL given. It is the same for both plains (urban) and the hilly areas (more rural)	Must be able to go home at least once in 3 months for 2 weeks. Willing to work on government holidays if this provision is made. Doctors must be given more leave
Transfer policies and promotion	Political interference in transfers, time frame in rural area often not specified. Transfer polices not implemented in a transparent manner	Transfer policies not clear. Once they agree to work in a rural area, they are stuck there forever. No timeframe indicated about when they are eligible for a more urban option. There is political interference while posting decisions are made-some senior doctors are made to do the rural stint while junior doctors get away	After completing 3 years of rural service, the government must assure transfer to better areas. Must streamline the transfer policy processes and make them transparent. If made to stay in rural areas for more than 3 years, promotions must be given.
Job security	Permanency of job, secure and comfortable	AYUSH doctors seemed more keen on a government job	Contractual jobs in the government to be converted to permanent positions

Management	Decision making, bureaucracy, administrative issues	Doctors cannot make independent decisions on administrative affairs. Often need permissions from higher authorities for simple decisions. Processes are bureaucratic, and communication between PHC facilities and health quarters is limited. Re-imbursements of money spent become difficult.	No specific suggestions. Improvement of communication between PHC and head-quarters suggested. Must hold meetings with authorities every 6 months to voice concerns
Career growth opportunities			
Postgraduation opportunities		Allopathic doctors only. No provision from government to assure career growth if placed in rural areas. No provision from the government for PG training (UK). In AP, this was available.	Reservation of PG seats would be a big motivational factor for doctors. Doctors want to retire as PG and not just as an MBBS doctor
CONTEXTUAL ATTRIBUTES			
Living facilities	Housing, water, electricity, market nearby	Housing conditions in rural areas were poor, "collapsed conditions," water and electricity problems present	Quarters for doctor within/close to premises of PHC. 24 hours water and electricity, cemented housing with 2–3 rooms, toilet, must have fridge, heating/ cooling systems, mosquito control and sanitation. Availability of shopping facilities
Proximity to family	Close to home-town, belong to same native village	In a rural area, would like to stay in the proximity of family. Currently, doctors are not given the choice of taking up a rural area in the same district/area they belong to	Given travel allowance to visit family if home town is far away. Posting within the same district preferred. This makes family contact easier, also language and community acceptance barriers are lower
Children's development	Education, opportunities, extra-curricular activities, future of next generation	Schools are not good in rural areas, teaching quality poor (teachers not qualified). English-medium schools not available, extra-curricular activities restricted, rural atmosphere was not safe and healthy for children, children's future opportunities limited	Would like good, competitive, private schools, with extra-curricular activities. English medium education, within 10 km radius. Open to provision of subsidized education for children far from rural area in a hostel set-up but preferred staying together
Family well-being and comfort	Spouse job, family adjustment to rural area, parents support possible, infection risk to family	Spouse's job an issue. Do not want to live separately from families. Elderly parents need support and access to medical facilities not available in rural area. Fear risking the family to infection (esp. young children)	No specific suggestions. Medical insurance for self and family can be considered
Security	Physical security, protection from community violence	Particularly female doctors face security issues at/after work. Doctor cannot handle drunk patients and relatives. If patient dies in the hospital, community blames death on the doctor and resorts to violence	General local security is required at work place and after work hours. Guards must be provided. Women must not be posted alone. Support of local self-government must be sought to ensure doctors' safety
Connectivity (transport)	Isolation, poor transport, vehicle provision, availability of roads	Poor road conditions, not well connected with the urban area, public transport lacking	Transport facilities present. Well connected by road to nearby towns. Car given. Willing to travel daily to remote area from nearby town (up to 10–15 km)
Community type	Poverty, illiteracy, ignorance, language barriers	Doctors felt that in rural areas, the community they live in and serve will be different. They might not be able to build a rapport.	Doctors felt the need for general awareness programs and overall rural development

Table A5: Attitudes of staff nurses toward rural service

ATTRIBUTE	MEANING	CURRENT LEVEL	DESIRED LEVEL
ORGANIZATIONAL FACTORS			
Financial attribute			
Salary	Increase in payments was a strong factor to motivate nurses to stay in rural areas	General range: Rs 8,000–14,000. A higher range was quoted for service in hilly terrain of Rs 18,000–20,000	General range: Rs 14,000–20,000/month (was as high as Rs 25,000–40,000 in three instances) No specific desired salary was quoted for work in hilly areas
Facilities			
Clinic infrastructure	Modern equipment such as X-ray machine, suction, IV, lab facilities. Life-saving equipment during emergency. Variety of drugs, supply of drugs, ambulance services	Supply of drugs and injections was not regular at the PHCs. Unavailability of diagnostic services meant patients had to go elsewhere. Lack of basic amenities like electricity made deliveries in particular, very difficult to perform. General lack of a functional labor room and instruments	Labs, diagnostic facilities, and supply of drugs must be made available. Ambulance facilities must be available for patients and staff
Support staff	Adequacy of number of support staff and doctors	Adequate number of doctors required along with specialists in the field	Adequate numbers of support staff along with specialists like orthopedics and gynecologists
Work load	Not too burdensome, shift system, work hours	As compared to the private sector, government nurses have to handle a huge work load. Work shifts were sometimes as long as 12 hrs	Nurses wanted well defined duty hours (9–12 and 4–6) with a 5 day work week. A lesser work load and more defined work responsibilities
Organizational culture, policies and management			
Policies on leave	Annual leave, ability to take leave when desired/during emergency.	It was mentioned how nurses were given 14 days of casual leave with no government holidays and no earned leave	Nurses in the rural areas must be allowed to take 6–10 days extra of sick leave in addition to 14 days of casual leave. Another suggestion was to have total leave amount to one month in a year
Policies on transfers	Time frame and duration of posting in rural area often not specified	Transfer policies are not clear or equitable. Some nurses have been posted in rural areas for over 24 years	Equal opportunities for transfer must be made available to all nurses. First posting may be in a rural area with the option of transfers after a definite period of time (5–10 years) so that the nurses don't feel like they're stuck
Job security	Government job, with pension, permanence of position	The job is often not permanent and the work load and responsibilities given are more than they can handle	Service to the poor, help with deliveries and permanence of posting were cited as reasons for postings in rural and remote areas.

CONTEXTUAL ATTRIBUTES			
Living facilities	Housing, water and sanitation, overall hygiene. Availability of shopping facilities	Nurses are sometimes required to stay in hospital accommodation 24 hours of the day	Accommodation provided to nurses in rural areas should ideally be a 2BHK, with a bathroom. The accommodation should be well ventilated and fenced, well constructed, and close to the PHC
Proximity to family	Close to home-town and in the same proximity as where the husband works and lives	Staying away from the family creates a problem especially if nurses are stationed in hilly areas. Work in rural PHCs results in staying away from husbands and children for a lot of the nurses	Given travel allowance to visit family if hometown is far away. Would like to live close to family when stationed in a rural PHC so that they may take care of children and parents and live with the husband
Connectivity (transport)	Poor transport, vehicle provision, availability of roads	Bus service to rural areas is very bad. Connectivity is poor, frequency is very low	Transport facilities must be available for nurses. Rural area must be well connected by roads. Availability of public transport, like buses, plying frequently, was is needed
Children's development (education)	Education, opportunities, future of children	Schools in rural areas are not that good. They are not English-medium schools. Their hygiene and overall cleanliness leaves a lot to be desired	Nurses want to give their children the best education and growth opportunities. They would like private, English-medium schools, with recognized accreditation (CBSE) with a school bus facility to pick and drop their children
Security	Physical security, protection from community violence. Security at the workplace	Nurse face issues of security at work and after work. Within the workplace it can get unsafe at night especially if nurses are the only staff present. There are no watchmen, which prevents nurses from working night shifts.	General local security is required at work place and after work hours. Guards must be provided. Would like to stay on the campus of the PHC for security reasons. Young nurses must not be posted unaccompanied to rural areas
Community type	Poverty, illiteracy, disconnect with patients, language barriers	Nurses felt that in rural areas, the community they live in and serve will be different. Patients might not be able to understand what is being told to them because of language barriers or illiteracy.	Nurses feel the need for overall rural development and would rather work in a community where they are understood and appreciated

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