PUBLIC HEALTH RESEARCH

A Cross Sectional Study of Intern's Willingness to Serve in Rural Primary Health Centres of Andhra Pradesh, India

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ABSTRACT

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Introduction The shortage of health professionals in rural areas is a global problem. The urban and rural maldistribution of doctors results in severe problems regarding access to and performance of health care services. Retaining doctors in rural areas is a challenging task for a number of reasons, ranging from personal preferences to difficult work conditions and low remuneration.

Objective The objective of the study was to understand the factors influencing medical and dental intern's choice to work in rural PHC's as a basis for designing policies to redress geographic imbalances in health professional's distribution.

Methods A total of 385 dental and medical interns in Andhra Pradesh provided a unique contingent valuation data in a cross sectional survey conducted in 4 medical and 4 dental colleges in Andhra Pradesh, using a questionnaire concerning their preferences, related incentives to work in various rural and remote primary health centres of Andhra Pradesh state, India.

Results The response rate of the study was 89 %, (n= 344), with only 24% of interns expressing their willingness to serve in rural/remote primary health centres. Most of the interns stressed for increase in salary, better accommodation and infrastructure of the hospitals as the factors for increasing their retention in remote rural areas.

Conclusions Although most Indian students are motivated to study medicine and dentistry by the desire to help others, this does not translate into willingness to work in rural areas. Efforts from the government to build intrinsic motivation during medical and dental training to serve in these deprived areas should be in focus with addition to improved working and living conditions and better remuneration.

Keywords Primary Health Centres - Rural and remote areas - Willingness - Interns - India.

INTRODUCTION

Health professionals play a pivotal role in improving health outcomes and without sufficient numbers of well educated and managed health professionals, there is a significant risk of not attaining the health related millennium development goals[1]. Most developing countries face shortages of health Professionals in rural areas which has profound consequences for health service delivery, and ultimately for health outcomes. Thus for equitable distribution of health care, there should be equitable distribution of health manpower with studies showing a positive correlation between the availability of health professionals and better health outcomes[2,3].

Most developing countries face shortages of health professionals in rural areas. There is an inverse care law of health since the rural to urban population distribution in India is 70: 30, whereas the density of doctors per 10,000 populations in rural: urban India is 30:70. India is primarily a rural community with 72.2% of its population being the village occupants and the rest 27.8% being urban residents[4,5]. In India, public health services in rural areas are administered through the primary health centres, which meet the needs of about 20,000-30,000 people. The primary health centres occupy a key position in the nation's health care system; which aims to provide comprehensive (preventive, promotive, curative) health care services to the people living in a defined geographical area of 100-200 square miles. The geographic distribution of India's health workforce is disturbing. Most (70%) health workers are present in urban areas where 28% of the population resides. This rural bias is consistent across cadres of health workers; 40% of allopathic physicians, nurses and midwifes, AYUSH practitioners and 20% of dentists are present in rural areas. This is reflected in the low health worker density of 11:42 per 10,000 population in rural:urban areas. Across cadres of health workers the differences are more alarming; the density of doctors per 10,000 population in rural: urban India is 3:13, of nurses 2.4:11.3, of midwifes 0.68:1.4, of pharmacists 1.3:4.4 and AYUSH (Ayurveda, Unani, Siddha and Homeopathy) practitioners 1:3.4. These differences are even more striking for female health workers, particularly female doctors. Almost three-fourths of the total numbers of dentists are clustered in the urban areas, which has only one-fourth of the country's population. with the census estimating about one dentist available for 10,000 population in urban areas and about 2.5 lakh population in rural areas. This is in great contrast to the physician-population ratio, which is around 1:1,855[6,7]. The public sector has made considerable attempts to appoint doctors in rural areas through its vast network of health sub-centres, primary and community health centres, but issues like absenteeism, ghost doctors, and dual practice have compromised the effectiveness of these efforts[7]. In 2006, there were a total of 1,043 dentists posted at the primary health centres level in different rural areas. Thus not even 20 percent of the existing primary health centres in India have the services of a dentist available for the rural population. Ever since 1980's, when the primary healthcare systems were implemented in India, dentistry was not adequately included, which has left oral health far behind other medical services since there are no set criteria for posting a dentist at the primary health centre level in rural areas[6].

Retention of dentists and physicians, in the early years beyond graduation is a major issue[8]. Stagnation of the infrastructure and basic facilities provided in rural areas has made it difficult for those areas to attract graduates to them[9,10,11]. With increasing awareness among the urban population and the stiff competition that graduates face in cities, there has been an increase in the number of postgraduate aspirants. Since the number of seats in various Indian postgraduate courses is very few in proportion to the large number of graduates each year, many of the new graduates immigrate to other countries to fulfil their aspirations and for monetary benefits.

The ultimate success or failure in attracting and retaining the health professionals in rural posts depends on health professionals' preferences and choices. Studies from developed countries notably USA, Canada, New Zealand and Australia suggest a number of significant factors that can improve retention of doctors in rural areas[10]. Thus to design policies that rectify these geographic imbalances it is vital to understand the factors determining health professional's choice to work in rural areas. Since much of the population in India are rural residents, our study focuses on the attitudes, interest and willingness of young interns who after completion of graduation would like to serve in these deprived areas. The objectives of the study were to determine whether existing policies and allowances provided to primary health centre doctors are satisfactory enough to attract the young interns and to determine various factors for their preferences to work in rural and remote tribal health centres in Andhra Pradesh, India.

MATERIALS AND METHODS

A cross sectional study was conducted using a structured questionnaire in English language during the 1st – 2nd week of April 2013. A 25 item questionnaire containing questions related to intern's willingness to serve in rural/remote tribal areas under Andhra Pradesh public health sectors, various factors influencing them to attract or reject rural posts, awareness of various existing allowances given by state government to rural/ remote doctors and their opinions to improve their

retention in rural/remote tribal areas was prepared. A 5- point Likert's scale was used to measure the factors to join government health care jobs.

Prior to the start of the study, a pilot study was conducted among 10 interns of Sri Sai College of Dental Surgery, Vikarabad. The questionnaire was completed well, implying that most of the questions were clearly worded and that the format of the questionnaire was acceptable. 2 questions were deleted due to ambiguous responses and the final questionnaire had 23 questions only. The Cronbach's α value obtained was 0.80. The sample size obtained was 385, using the formula:

$$n = \frac{(Z_{1-a/2})^2\, p.q}{D^2}$$

Where, $(Z_{1-a/2})^2$ = 95% of confidence interval = 1.96, p = prevalence, q = 1-p, D = % error = 5%= 0.05. p was in assumption that 50% of the participants would be willing to serve in rural primary health centres.

Using a simple random sampling method, 4 medical and 4 dental colleges were selected from the complete list of 37 medical and 22 dental colleges in Andhra Pradesh obtained from the institutional website of Dr Nandamuri Taraka Rama Rao University of Health Sciences.[12] The study participants selected were freshly graduating interns of these selected colleges. All the interns available on the day of distribution of the questionnaires and those agreeing to give informed consent for willing to participate in the study were included and those absent on the day were excluded. The ethical clearance was taken from the institutional review board of Sri Sai College of Dental Surgery, Vikarabad and permission to conduct the study was taken from all concerned authorities of the selected colleges. The collected questionnaire responses were entered into Microsoft excel sheet and data was analyzed using SPSS version 16. Chi square test was used to measure the significant difference among the groups.

RESULTS

The response rate of the study was about 89 %(n=344). The mean age of interns was 23 yrs, (SD = 2.06) with, 173 male and 171 female interns. There were 163 (47%) dental interns and 181 (53%) medical interns. The Figure 1 shows the interest of interns to serve in rural and remote tribal areas under primary health centres (in percentages).

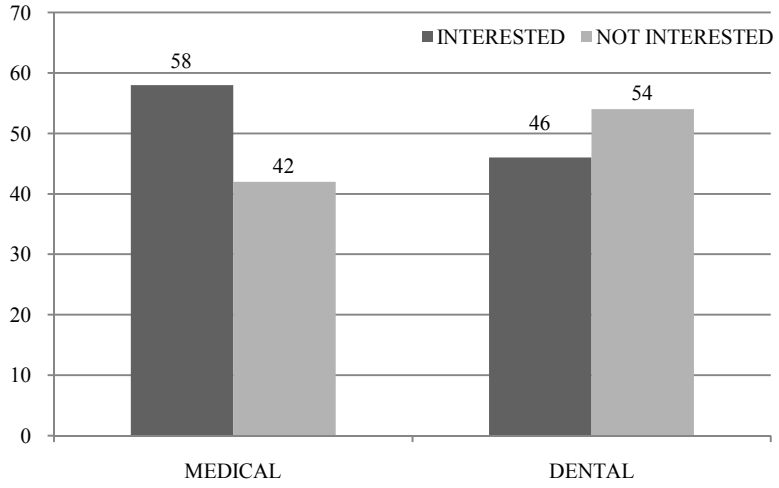

Figure 1 Interest of interns to serve in rural and remote tribal areas under primary health centres (in percentages)

Around 58% of medical and 46% of dental interns stated in the beginning of the questionnaire that they were interested to work in the rural and remote areas under public health sectors.

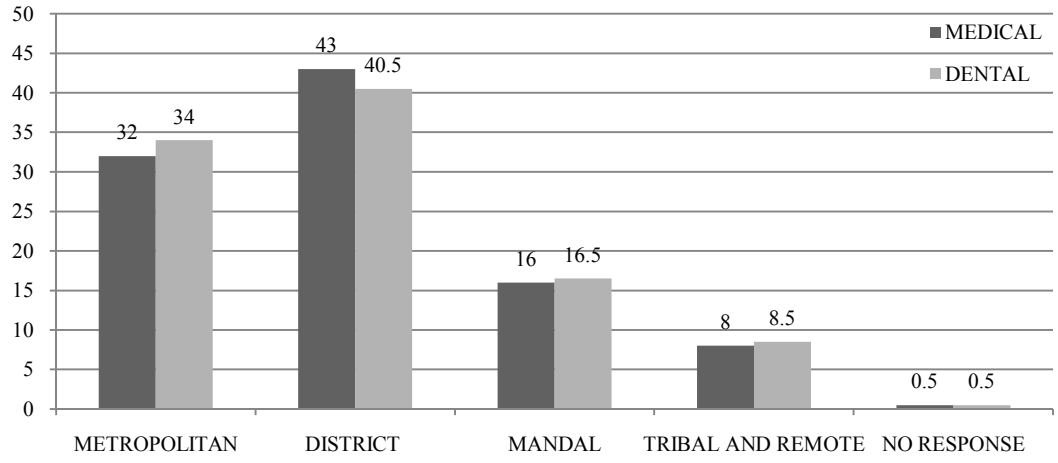

Figure 2 Area of choice to serve in the public health sector (in percentages)

When asked for the area of choice between urban and rural government health sectors, 32% of medical and 34% of dental interns were willing to work in metropolitan area, 43% of medical and 40% of dental interns in district places. Only 16% interns preferred mandal areas with very few in tribal and remote areas (8%). Most of the interns preferred urban areas (74%) compared to the rural areas (24%) (Figure 2).

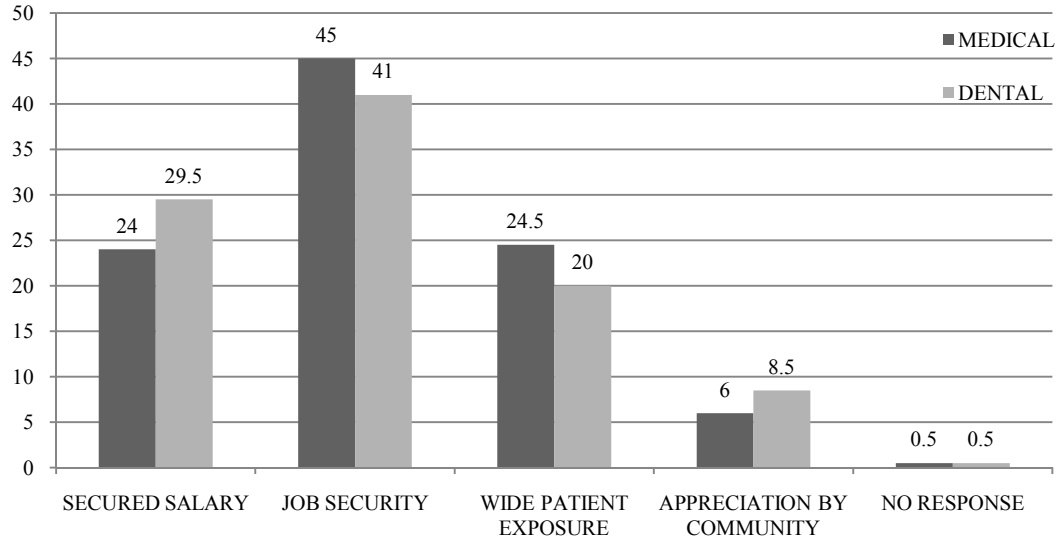

Figure 3 Factors attracting to work in the public health sector (in percentages)

Majority of the interns felt that job security (medical 45%, dental 41%), and better exposure to different patients (medical 24.5%, dental 20%) were the main reasons towards working in governmental health sector.

Table 1 Shows the factors which attract to join rural/remote primary health centres in percentages

Factors	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Significance level($p<0.05$)
More salary in terms of rural allowances, house rent allowances, emergency health care allowances	48.5	34.3	9	4.7	0.9	0.77
Pursue pg degree through in service quota	28.2	44.2	16.9	5.5	1.5	0.08
Equipments in hospital	23	23.8	27	17.2	4.9	0.006
Appreciation by the community	24.7	36.6	23	9.6	2.6	0.07
Living and working conditions	21.8	22.4	24.1	17.7	9.9	0.04
Personal safety	25.3	23.3	21.2	20.3	4.9	0.09
Easy to develop private practice	18	27.3	23.5	19.8	5.5	0.08
Saturated urban areas with doctors and hospitals	27	30.8	14.8	18	4.7	0.002
Serve poor, needy, aged, helpless people	37.8	28.5	20	7	2.6	0.06
Exposure to a wide variety of cases	35.2	32.3	19.2	8.7	2.6	0.08
Job satisfaction	34.6	31.1	20.1	7.8	3.2	0.01
If job is near to home place.(transportation facility)	34.9	32	18.6	7.3	4.1	0.28
Since i am posted to work in rural area	11.6	35.8	25	13.1	8.1	0.07

Among the factors which attracts them to join rural/remote areas under government health sector, the interns strongly agreed for higher salaries (48.5%), job satisfaction (34.6%) and serving poor and needy patients (38%), better exposure to wide variety of cases, job satisfaction and if given a job near to home place (35%).

There was a statistically significant difference among the dental and medical interns regarding the factors that make them join rural service. Presence of better equipments in the primary health centres, ($p= 0.006$), better living and working conditions in the rural and remote areas ($p= 0.04$) and the reason that there were saturated urban areas with doctors and hospitals ($p= 0.002$) was significantly different in both the groups. No significant difference was found among the interns regarding the factors influencing them to join rural service based on their gender.

Only 7% of the medical and 4% of dental interns were aware of the rural allowances provided by the state government to the doctors working at primary health centres which may be due to lack of interest of the graduates towards the public sector jobs.

DISCUSSION

Since the present study was a perception based questionnaire study, the reliability of the questionnaire data was checked by resurveying 10% of the participants on the next day, which was found about 90%.

The preference of urban areas (74%) over the rural areas (24%) was seen in our study which is similar to the studies in other countries by Peter Agyei-Baffour in Ghana[13], Geoffrey Wandiraa et al in Uganda[14], and Shomikho Raha et al in Uttar Pradesh, India[15]. A similar study carried out in Croatia, concluded that the majority of final year medical students would like to work in Zagreb, the capital of Croatia[16]. It is not surprising that most young doctors seek their future in major cities, since urban areas edge over rural areas in terms of better opportunities, work infrastructure, lucrative lifestyle, health care and education for children and job prospects for the spouses.

When asked regarding major driving factors for attraction towards rural/remote primary health centre jobs, higher salary (48.5%) emerged as the top priority followed by intention to serve poor, needy and helpless people (38%). According to the Neoclassic Wage Theory, it is universal that the choice of any human worker mobility is driven

largely by financial motives[1,17,18]. And the major trend seen in health professionals to pursue post graduation could be due to the stiff competitive market in recent years with the public preference for postgraduate doctors to seek health care. A similar study conducted by Edmond Girasek et al[19], showed that 70% of undergraduates were ready to work in rural areas if provided high salaries and access to more serious cases. Also a study in New Zealand, most doctors stressed that money was the only really effective incentive and they would consider to serve in remote areas if provided 3-5 times more pay[20,21].

The efforts of government to attract more number of health professionals towards the rural areas can be seen in many countries. In Thailand, students recruited by the Ministry of Public Health receive heavily subsidised tuition fees, learning materials, free clothing and boarding during the studies in return for carrying out a compulsory public health service in remote areas after graduation. In South Africa, the Ministry of Health introduced compulsory rural service as well as financial incentives to address inequities in the distribution of health personnel. Zambia has a package which includes a rural allowance equivalent to about 30 percent of their salary, renovation of accommodation, contribution to school fees, vehicle and or housing loans with support for further education. Many Latin American countries have already set a compulsory rural service with Mexico way ahead in 1936[9].

About 174 participants (50.5%) of this study emphasized for better infrastructure and working conditions, 15 participants (4.3%) for living conditions and 81 participants (23.5%) gave both factors for their retention. A similar Australian study by Henry JA et al among medical students showed that better professional support, career opportunities, educational opportunities for children; and proximity to family and social circles were the most significant influencing factors[22].

This study highlights the health manpower demand which has to be seriously addressed by the government. Although the respondents have suggested factors that may make rural practice more attractive, it is important to question the same group after a few years time to see where they are practising, and what influenced that decision. Though various studies conducted in other countries have revealed attracting factors for the health professionals[9], but different health systems, methods of practice and geographical situations makes it difficult to generalise rural health research from other countries to India. In accordance with a WHO paper, our study also suggests that financial incentives alone are not sufficient and have to be supplemented by adequate living conditions[1]. However, significant North American and Australian studies have shown that students exposed to rural practice at an early phase have an increased chance of returning to a rural area to practise medicine/dentistry and increases the likelihood of choosing rural practice as a career [9,21]. When combined with a policy of recruiting students from a rural background, an even higher percentage of graduates will choose rural practice as a career pathway. Furthermore, although studies have speculated on the possible reasons young doctors may not want to choose rural practice, the factors that might entice them into rural practice have not been explored. This study has looked specifically a at intern which is the key group to target who are the seeds for next generation of rural general practitioners.

CONCLUSIONS

The results of this study show that only a quarter of interns were willing to serve in rural primary health centres. The interns expressions of their needs encompassed a wide range of demands and improvements. Higher economic incentives, sophisticated and advanced medical and dental equipments, promotions and opportunity for post graduation with needs based skills training and better residence with security to their families were emphatically stated by most of them. This study indicates without proper incentives existing geographical maldistribution of professionals will be maintained, even increased.

RECOMMENDATIONS

It is a need of hour for the motivation of young graduates to serve in rural areas. The effectiveness in staffing of public health sector in rural and remote areas depends on analysis of factors determining their attraction and retention, and identification of human resource management strategies to respond appropriately to the problems. Well designed and implemented incentive schemes have the potential to sway a significant number of young doctors towards rural practice. Upgrading the hospital equipments with latest and advanced techniques with telemedicine services, better residential quarters and security, implementation of compulsory rural service for a minimum period of time with recognition and rewards for the services rendered under difficult remote conditions are the few key issues for the government to address on.

Declaration of interest: The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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