ORIGINAL ARTICLE

A Study on Attitude and Perception of Medical Students towards Rural Health Services in Hilly Region of Uttarakhand

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ABSTRACT

Background: The wide disparities in health status exist within many countries worldwide. Lack of access to quality health-care providers is one of the primary root causes of health inequity and is disproportionately experienced by people living in remote and rural communities.

Aims & objectives: To study the attitude and perception of medical students towards rural health service.

Materials and Methods: A cross-sectional study was conducted in the government medical college in the state of Uttarakhand, India. A semi-structured, self-administered questionnaire was filled by 457 undergraduate medical students. Data were analyzed by using SPSS version 16. Chi square test was used for statistical analysis and $p < 0.05$ was considered significant

Results: Of the 457 students, 261 (57.1%) were willing to work in rural areas after graduation. Mostly (33.9%) said they would work for 1-2 years. Majority (63.5%) of the students wants to contribute towards the betterment of health system of the state. 38.7% wish to join Government health facility. Limited infrastructure facilities, limited professional growth, delay in post graduation were the few reasons cited by the students for refusing to work in rural areas. Rural residence and schooling done in rural areas has significant association with willingness to work in rural areas after graduation.

Conclusion: More than half of the students wished to work in rural areas but mostly for one to two years. The rural postings should be made attractive so that more of the undergraduates join rural health system.

Key words: Medical students, rural, health service, Uttarakhand

INTRODUCTION

Approximately one half of the global population lives in rural areas, but less than a quarter of the total physician workforce served this area. The situation is especially dire in developing countries where a critical shortage of trained health workers means an estimated one billion people have no access to essential health-care service. [1]

The critical shortage of human resources in health service delivery and its unequal geographical distribution is documented in many studies. [2] According to a report, almost 69% of India's population lives in its villages while only about 26% of its doctors serve here. [3]

Uttarakhand (UK) is predominantly a hilly state (86% of the total geographical area). [4] It is considered as a high focus state under National Rural Health Mission considering the poor health outcomes. The situation here is far worse with doctor per 1000 population ratio of 0.31. [5]

As per the Rural Health Statistics (RHS) 2016 report, 44.3% of the medical officer post lie vacant at Primary Health Centre (PHC) in UK while there is a shortfall 82.6% specialists at Community Health Centre (CHC) in the state. [6]

Hence, the state government has implemented a compulsory rural service after MBBS since the year 2008 when the first government medical college was established in the state. All the medical graduates from the Government colleges enter the government service under the 'bonded' contract and have to sign a bond at the time of admission to medical college that requires them to compulsorily serve in rural areas for 5 years. For the bonded category, the government heavily subsidizes the tuition fee. Such candidates are required to join the rural service after they finish their medical internship. In case of breaking this bond the student has to submit 30 lakhs which has been increased to 1 crore since the academic year 2017-18. [7]

OBJECTIVES

The objective of this research was to study the attitude and perception of medical students towards rural health service

METHODOLOGY

Uttarakhand is one of the hilly states situated in Northern India. There are three government medical colleges run by the state government and the present study was conducted in one of them. This cross sectional study was conducted among undergraduate medical students during Aug 2017to Dec 2017.

Sample size – Considering a default prevalence (p) of 50% for favourable attitude towards working in rural areas after completing graduation and applying the formula of $4pq/d^2$, where d or absolute precision was taken as 5% and considering the non response rate as 10%. Sample size was calculated to be 440.

Sampling procedure – All the undergraduate medical students present on the day of study were briefed about the purpose of this study and were told that their participation was voluntary. They were not required to write their names to ensure confidentiality and to elicit correct responses from them. A predesigned, pretested semi-structured self-administered questionnaire was used to collect the relevant information pertaining to study variables. Ethical approval was obtained from Institutional Ethics Committee before the commencement of study and written informed consent was obtained from the students.

Data collection and analysis – The data collected was coded, entered into Microsoft excel sheet and were analyzed using the Statistical Package for the Social Sciences version 16 software (SPSS Inc., Chicago, IL, United States). Statistical analysis was done using Chi square test and $p<0.05$ was considered significant.

RESULTS

A total of 457 completed questionnaires were assessed. The mean age of respondents was 20.7±1.76 years. The female students 285 (62.4%) outnumbered the males 172 (37.6%). Respondents' father and mother were graduate and above 370 (81%) and 298 (65.2%) respectively. 132 (28.9%) student's parents were working in rural areas. Majority 363 (79.4%) of the student's parent's residence was in urban area. Students mostly 383 (83.8%) had their secondary school in urban areas. 382 (83.6%) students made self - decision regarding choosing medicine as a career. 261 (57.1%) of students were willing to work in rural areas after graduation. 155 (33.9%) of the students would like to work only for 1-2 years in rural areas after completing graduation. [Table 1]

Table 1: Socio-demographic characteristics of the medical students (N=457)

Variables	Students (%)
Age group (years)	
17- 20	124 (27.1)
20-23	255 (55.8)
23-26	78 (17.1)
MBBS semester	
First	86 (18.8)
Third	99 (21.7)
Fifth	99 (21.7)
Seventh	95 (20.8)
Ninth	78 (17)
Sex	
Male	172 (37.6)
Female	285 (62.4)
Education of Father	
Below graduate	87 (19)
Graduate and above	370 (81)
Education of Mother	
Below graduate	159 (34.8)
Graduate and above	298 (65.2)
Any one of the parent working in rural areas	
Yes	132 (28.9)
No	325 (71.1)
Residence	
Urban	363 (79.4)
Rural	94 (20.6)
Secondary school	
Urban	383 (83.8)
Rural	74 (16.2)
Choosing Medicine as a career was decision made by	
Self	382 (83.6)
Parents	64 (14)
Others	11 (2.4)
Work in rural area after MBBS	
Yes	261 (57.1)
No	196 (42.9)
If at all one has to serve in hilly region, duration of service (in years)	
<1	8 (1.8)
01-02	155 (33.9)
02-03	151 (33)
03-04	101 (22.1)
04-05	42 (9.2)

Table 2: Factors perceived by the medical students for willingness to work in rural areas

Perceived factors for working in rural areas*	Students (N=457) (%)
To do private practice	39 (8.5)
Compulsory rural service bond	287 (62.8)
To join Government Health facility	177 (38.7)
Less work load in rural areas	103 (22.5)
Own residence in rural areas	50 (10.9)
Less stressful life	124 (27.1)
To contribute for betterment of health system of the state	290 (63.5)

*Multiple responses

Table 3: Factors perceived by the medical students for unwilling to work in rural areas

Perceived factors for unwilling to work in rural areas*	Frequency (N=457) (%)
Limited professional growth	288 (63)
Limited infrastructure facilities	297 (64.9)
Own residence in urban areas	113 (24.7)
Delay in Post graduation	265 (57.9)
Lack of educational opportunities for children and family amenities	219 (47.9)
Lack of recreational facilities	201 (43.9)
Less salary	111 (24.3)
Geographical location of health posts	187 (40.9)

*Multiple responses

Table 4: Incentives for encouraging the doctors to work in rural areas

Incentives the Government should provide for encouraging the doctors to work in rural areas*	Frequency (N=457) (%)
Reservation in PG seat	282 (61.7)
Appropriate career and postings	289 (63.2)
Salary and incentives should be regular and 1.5 times of current salary	328 (71.7)
Improvement of facilities	392 (85.7)

*Multiple responses

All the students were asked to state the factors they perceived to work as well as for unwilling to work in rural areas. Of the 457 students, majority 290 (63.5%) of the students want to contribute towards the betterment of health system in the state, followed by 287 (62.8%) intend to work in rural areas as a compulsory rural health service bond filled at the time of admission. 177 (38.7%) were keen to join Government health facility. [Table 2]

The factors which discourages the budding doctors from working in rural areas include, limited infrastructure facilities 297 (64.9%), limited professional growth 288 (63.0%), delay in post graduation 265 (57.9%), lack of educational opportunities for children and family amenities 219 (47.9%), lack of recreational facilities 201 (43.9%), geographical location of health posts 187 (40.9%), residence in urban areas 113 (24.7%) and less salary 111 (24.3%). [Table 3]

Few suggestions to the Government as stated by the students which can encourage doctors to work in rural areas includes improvement of facilities 392 (85.7%), regular salary and incentives & 1.5 times of current salary 328 (71.7%), appropriate career and postings 289 (63.2%), and reservation in post graduation (PG) seat 282 (61.7%). [Table 4]

Table 5: Association between rural postings and socio-demographic profile

Variables	Rural posting			χ^2, p value
	Yes (n=261)%	No(n=196)%	Total(N=457)%	
Age group (years)				χ^2 =7.01, p = 0.03*
17-20	81(65.3)	43(34.7)	124(27.1)	
20-23	132(51.8)	123(48.2)	255(55.8)	
23-26	48(61.5)	30(38.5)	78(17.1)	
MBBS semester				χ^2=10.3, p = 0.036*
First	62(72.1)	24(27.9)	86(18.8)	
Third	56(56.6)	43(43.4)	99(21.7)	
Fifth	52(52.5)	47(47.5)	99(21.7)	
Seventh	49(51.6)	46(48.4)	95(20.8)	
Ninth	42(53.8)	36(46.2)	78(17.0)	
Sex				
Male	107 (62.2)	65 (37.8)	172(37.6)	χ^2=2.93, p = 0.087
Female	154 (54.0)	131 (46.0)	285(62.4)	
Education of Father				
Below graduate	52 (27.8)	135(72.2)	187(40.9)	χ^2=111, p= 0.000*
Graduate and above	209 (77.4)	61(22.6)	270(59.1)	
Education of Mother				
Below graduate	96(60.4)	63(39.6)	159(34.8)	χ^2=1.06, p = 0.303
Graduate and above	165(55.4)	133(44.6)	298(65.2)	
Any one of the parents working in rural areas				
Yes	91(68.9)	41(31.1)	132(28.9)	χ^2=10.6, p = 0.001*
No	170(52.3)	155(47.7)	325(71.1)	
Residence				
Urban	184(50.7)	179(49.3)	363(79.4)	χ^2=29.7, p = 0.000*
Rural	77(81.9)	17(18.1)	94(20.6)	
Secondary school				
Urban	203(53.0)	180(47.0)	383(83.8)	χ^2=16.3, p = 0.000*
Rural	58(78.4)	16(21.6)	74(16.2)	

*significant at p <0.05

Association between student's willingness to work in rural areas and factors such as age, semester in which students were studying, education status of father, any of the parents working in rural area, residence and schooling in rural areas has significant association while sex of the student and education status of mother was not found to be significant. [Table 5]

DISCUSSION

In the present study, 26(57.1%) were willing to work in rural areas after completing their graduation. Almost similar finding was reported by Kotha SR et al [8] and Chuenkongkaew WL et al. [9] In some studies prevalence was as low as 8% [10] and as high as 72.4%. [11]

In the present study, 163 (35.7%) were willing to work upto 2 years. In study conducted by Jain M et al [12] 66.2% want to work in rural areas for < 1year while in Saini NK et al [13] 66.4% want to work for a few months to 2 years.

The major factor which was perceived to work in rural areas were compulsory rural service bond signed by medical students at the time of admission, others were contribution towards state health facility, to join Government job, less stressful life and workload, own residence in rural area and to do private practice. In studies done by Jain M etal [12] and Saini NK et al, [13] 66% & 42.3% students respectively want to contribute towards state health system while 42% & 7.5% of the students respectively felt that in rural areas life was less stressful. Sultana A et al [14] observed that 8.4% participants perceived less work pressure in rural while in study by Sinha RK [15] 62.5% participants perceived less competition. Jain M et al [12] observed in her study that 15% medical students want to do private practice.

The factors perceived for not willing to work in rural areas were limited infrastructure facilities. Similar concerned were echoed by medical students in other studies. [9, 11, 12, 13, 16, 17] Limited professional growth and lack of educational opportunities for children and family amenities were other factors cited by the students, similar findings were observed in other studies also. [9, 12, 13, 16] Students were also apprehensive about rural postings as this would delay in doing post graduation as reported by students in other medical colleges.[11,17] Less salary and lack of recreational facilities were among other issues, as was also reported by other researchers. [13, 14, 16]

Incentives as suggested by the medical students which Government should provide for encouraging the doctors to work in rural areas includes improvement of facilities whether it is health infrastructure facility, accommodation, transport, security etc. increase in salary, appropriate career opportunities and postings along with reservation in PG seat for those who worked in rural areas. Similar findings were observed in other studies also. [11, 12, 14, 16, 18]

Significant association with student's willingness to work in rural areas after graduation and rural residence was also reported in other studies. [8, 9, 13-16] Chuenkongkaew WL et al, [9] Jain M etal, [12] Sinha RK [15] observed that students who had done schooling from rural areas were more willing to work in rural areas similar to the finding observed in present study.

CONCLUSION

More than half of the students intend to work in rural areas after graduation but mostly for a period of upto two years. Government should take certain steps for attracting and retaining the doctors in rural areas like providing better infrastructure, career opportunities and reservation in PG seat etc.

Limitation of the study: It could have been done on a larger scale involving all the undergraduate medical students in the three state run government medical colleges of Uttarakhand for better representation.

Relevance of the study: Since there is crisis of doctors, especially in remote areas, it is better to know what all factors influence the medical student's attitude and perception regarding rural posting. The suggestions can be helpful to the policy makers in attracting and retaining doctors in rural remote areas.

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