



## Original Research Article

## Medical student's attitude towards serving rural areas: A cross sectional study in Maharashtra, India

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## ABSTRACT

**Context:** Rural population of India is grossly underserved by healthcare professionals. Gap exists between health services for urban and rural communities.

**Aims:** 1) To determine the attitude of medical students towards serving rural areas and factors affecting it. 2) To explore reasons behind willingness and unwillingness to work in rural areas.

**Study setting and design:** It was a cross-sectional study conducted in medical colleges.

**Materials and Methods:** Among three medical colleges in city, two medical colleges were selected by simple random sampling using lottery method. All 450 undergraduate medical students in both selected medical colleges were included into the study.

**Statistical analysis used:** Binary logistic regression analysis, Odds ratio, Chi-square test and percentages were used to analyse the data.

**Results:** 35.82% medical students were interested in working at rural areas. Age, parental education, place of residence, type of college and year of undergraduation of medical students had significant association with their preference towards rural practice. Social service was commonest reason students being interested in working rural area while scarcity of health facilities was major cause for negative attitude towards rural practice.

**Conclusions:** Majority of medical students were not in favour of working in rural areas. Urban rural disparity was more obvious among Allopathy students. There is need to focus on working environment at rural areas as lack of amenities in the rural areas was a common reason behind unwillingness of students towards rural practice.

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### 1. Introduction

Access to health is a basic human right but there are widened health gaps between different countries, within country and among social groups.<sup>1</sup> Health status of rural people are poor, and they do not have access to the same range of healthcare services as urban communities.<sup>2</sup> 74% of graduate doctors living in urban areas serve only 28% of

national population while rural population remains largely underserved. This disparity of health care in rural areas is only going to increase in future.<sup>3</sup>

Across the country, rural public health facilities failing to attract, retain, and ensure regular presence of highly trained medical professionals.<sup>4</sup> Thus this study was carried out to determine the attitude of medical students towards serving rural areas and to explore reasons behind willingness and unwillingness to work in rural areas.

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## 2. Materials and Methods

It was a cross-sectional study conducted over the period of 6 months from June to December 2012 at Nanded city, Maharashtra. Nanded is the second largest urban center in the Marathwada region, after Aurangabad in Maharashtra. There are three medical colleges in the Nanded city (one Allopathic, one Ayurvedic and one Homeopathic). Among these, two medical colleges (one Allopathic and one Ayurvedic) were selected by simple random sampling using lottery method. All 450 undergraduate medical students from first year to final year and interns in both selected medical colleges were included into the study. In the case of the students who were absent at the time of first session, mop up round was undertaken to cover the remaining subjects.

All medical students from first year to final year and interneers were included in the study. Medical students not giving voluntary consent to participate in the study were excluded from study.

The subjects were clearly told about the aims and objectives of the study. They were requested to fill the proforma with full assurance about the confidentiality and anonymity of their information. The subjects were assured that the data would be used only for scientific purpose of the study. Informed consent was obtained from the study subjects. The students were asked to complete the questionnaire in a class at the end of lecture and returned them to author in the same session.

Information regarding socio demographic characteristics, preference of medical students regarding place of practice, factors associated with their preference of place of practice and reasons behind willingness and unwillingness to practice in rural areas were collected using self-administrated questionnaire to the medical students.

Data was entered into SPSS 16 software and analyzed. Association was tested between preference of place of practice and socio-demographic and other associated factors using Chi square test.  $p$  value  $< 0.05$  was considered as statistically significant.

## 3. Results

Among 450 medical students only 416 completely answered the questionnaire. Thus, response rate was (92.44%). 183(44%) students were from Ayurvedic college and 233(56%) students were from allopathic college.

### 3.1. Socio-demographic profile of medical students

Majority 225(54.1%) students were from 20 – 24 years age group including student's 101(55.2%) from Ayurveda and 124(53.2%) from Allopathy. Females constituted 219(52.6%) of all students. 993(50.8%) females were studying in Ayurvedic College while 126(54.1%) were from Allopathic College. Only 18(4.3%) students were

married and 398(95.7%) were unmarried. 306(73.6%) student were Hindu, 65(15.6%) were Muslim and 34(8.2%) were Buddha by religion. 314(75.5%) students belong to nuclear family and 102(24.5%) from joint family. Majority students were from well-educated family. 275(66.1%) had father's education while 97(23.3%) had maternal education above graduation level. (Table 1)

### 3.2. Preference of place of practice and factors associated with it

Majority 267 (64.18%) medical students wish to practice at urban areas while 149 (35.82%) students were interested in working at rural areas. Among Ayurveda around 45% students were interested in working rural areas as compared to only 27% students from Allopathy. (Figure 1)

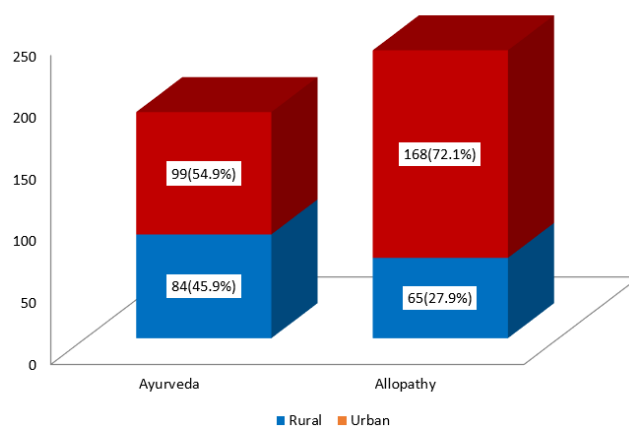


Fig. 1: Preference of place of medical practice by study subject

Among medical students, significantly higher numbers of students of Ayurveda were interested in working at rural areas as compared to students from Allopathy, while preference towards rural practice significantly decreases from first to final year of undergraduation. Age, father's education, mother's education, place of residence and place of primary education of medical students had association with their preference towards rural practice. (Table 2)

### 3.3. Binary logistic regression analysis between sociodemographic characteristic and preference of place of practice reported by medical students

The above associations concluded by chi square and chi square trend test were further examined through binary logistic regressions by taking rural or urban areas as preference of place of practice as a dependent variable and medical student's sociodemographic characteristic as a covariate (independent variables).

Odds Ratio along with levels of significance of regression models for preference of place of practice were shown

**Table 1:** Socio-demographic profile of medical students

Socio-demographic Variables		Ayurveda (%) 183(44)	Allopathy (%) 233(56)	Total (%) 416(100)
Year of under-graduation	1 <sup>st</sup> year	42 (23.0)	49 (21.0)	91(21.88)
	2 <sup>nd</sup> year	47 (25.7)	49 (21.0)	96(23.08)
	Final year	46(33.8)	90(66.2)	36(32.7)
	Intern	48 (26.2)	45 (19.3)	93(22.36)
Age	≤ 19 years	68 (37.2)	87 (37.3)	155(37.3)
	20 – 24 years	101 (55.2)	124 (53.2)	225(54.1)
	≥ 25 years	14 (7.7)	22 (9.4)	036(8.7)
Fathers education	Illiterate	7(3.8)	3(1.3)	010(2.4)
	Upto Primary	3(1.6)	2(0.9)	005(1.2)
	Secondary	22(12)	22(9.4)	044(10.6)
	HSC/ Intermediate	39(21.3)	43(18.5)	082(19.7)
Mothers education	Graduate and above	112(61.2)	163(70.0)	275(66.1)
	Illiterate	27(14.8)	15(6.4)	042(10.1)
	Upto Primary	6(3.3)	8(3.4)	014(3.4)
	Secondary	71(38.8)	98(42.1)	169(40.6)
Place of primary education	HSC/ Intermediate	46(25.1)	48(20.6)	094(22.6)
	Graduate and above	33(18)	64(27.5)	097(23.3)
	Rural	66 (36.1%)	54 (23.2%)	120(28.85)
	Urban	117 (63.9%)	179 (76.8%)	296(71.15)

**Table 2:** Factors associated with preference of place of practice by medical students

Socio-demographic variable		Place of practice (n – 416)		p value <sup>(1)</sup>	p value <sup>(2)</sup>
		Rural (%)	Urban (%)		
Speciality	Ayurveda	84(45.9%)	99(54.1%)	<0.0001	-
	Allopathy	65(27.9%)	168(72.1%)		
Year of under-graduation	I year	43(47.3%)	48(52.7%)	<0.0001	<0.0001
	II year	46(47.9%)	50(52.1%)		
	Final year	43(31.6%)	93(68.4%)		
	Interns	17(18.3%)	76(81.7%)		
Age	≤ 19 years	70(45.2%)	85(54.8%)	0.002	0.0004
	20 – 24 years	73(32.4%)	152(67.6%)		
	≥ 25 years	06(16.7%)	30(83.3%)		
Fathers Education	Illiterate	08(80.0%)	02(20.0%)	0.0004	< 0.0001
	Upto primary	02(40%)	03(60%)		
	Secondary	25(56.82%)	19(43.18%)		
	HSC/intermediate	30(36.6%)	52(63.4%)		
Mothers education	Graduate and above	84(30.55%)	191(69.45%)	< 0.0001	<0.001
	Illiterate	20(47.6%)	22(52.4%)		
	Upto primary	11(78.6%)	03(21.4%)		
	Secondary	58(34.32%)	111(65.68%)		
Place of pri.edu.	HSC/intermediate	39(41.5%)	55(58.5%)	<0.0001	-
	Graduate and above	21(21.65%)	76(78.35%)		
Residence	Rural	70 (58.3%)	50 (41.7%)	<0.0001	-
	Urban	79 (26.7%)	217 (73.3%)		
Residence	Rural	69(57.5%)	51(42.5%)	<0.0001	-
	Urban	80(27%)	216(73%)		

1 - ( $\chi^2$  test), 2 - ( $\chi^2$  test for trend)

**Table 3:** Binary logistic regression analysis between sociodemographic characteristic and preference of place of practice reported by medical students

Characteristics	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
							Lower	Upper
Speciality	.795	.245	10.558	1	.001	2.214	1.371	3.576
Year of undergraduation	.016	.161	.009	1	.923	1.016	.741	1.392
Age	-.212	.104	4.117	1	.042	.809	.659	.993
Sex	-.056	.249	.050	1	.822	.946	.580	1.542
Type of family	.681	.269	6.389	1	.011	1.976	1.165	3.349
Marital status	.785	.592	1.756	1	.185	2.192	.687	6.999
Religion	.280	.128	4.816	1	.028	1.324	1.030	1.700
Residence	.036	.355	.010	1	.919	1.037	.517	2.080
Fathers education	-.135	.109	1.558	1	.212	.873	.706	1.080
Mothers education	-.013	.093	.019	1	.890	.987	.823	1.184
Medical professional relative	.131	.240	.300	1	.584	1.140	.712	1.826
Place of primary education	1.067	.342	9.769	1	.002	2.908	1.489	5.680
Socioeconomic status	-.121	.147	.677	1	.411	.886	.664	1.182

**Table 4:** Reasons behind willingness to practice in rural area

Reasons behind willingness in practicing at rural area	No. of medical students (%) (n-149)
Social service	70(47.0%)
To gain experience	18(12.1%)
Near to home	15(10.1%)
Easy to settle	14(9.4%)
Less competition in practice	10(6.7%)
Get time to study for PG entrance	09(6.0%)
Less workload in rural areas	07(4.7%)
Less stressful work	06(4.0%)
Total	149(100%)

**Table 5:** Reasons behind unwillingness to practice in rural area

Reasons behind unwillingness to practice in rural area	No. of medical students (%) (n-267)
Scarcity of health facilities	89(33.3%)
Less money	49(18.4%)
Bad living conditions	41(15.4%)
No scope to learn advance technique	19(7.1%)
Non cooperative people	17(6.4%)
Less safety	17(6.4%)
Less experience	15(5.6%)
Away from friends, family and relatives	11(4.1%)
Communication problem	09(3.4%)

in Table 3. A significant association was found between preference of place of practice and medical students characteristics namely, type of medical speciality, age, religion, type of family, and place of primary education. (Table 3)

#### 3.4. Reasons behind willingness to practice in rural area

Social service 70(47.0%) and to gain experience 18(12.1%) were commonest reasons students being interested in working rural area. Easy to settle 14(9.4%), get time to study

for PG 09(6.0%), less workload 07(4.7%) and less stress 06(4.0%) were other common reason behind willingness of medical students towards rural practice. (Table 4)

#### 3.5. Reasons behind unwillingness to practice in rural area

Scarcity of health facilities 89(33.3%), less money 49(18.4%) and bad living conditions 41(15.4%) were recognised as major reasons for negative attitude of medical students towards rural practice. No scope to learn advance technique 19(7.1%), noncooperative people 17(6.4%), less

safety 17(6.4%) and less experience 15(5.6%) were other factors due to which medical students not favour to work at rural areas. (Table 5)

#### 4. Discussion

Around the world, the health status of people in rural areas is generally worse than in urban areas. Even in countries where the majority of the population lives in rural areas, the resources are concentrated on the cities.<sup>5</sup>

In present study, medical students revealed a slightly negative attitude toward working in rural areas. Only one third (35.82%) students were in favor of working in rural areas. Wide variation was noted among choice of medical students regarding place of practice in different countries. Preference of Indian medical students towards rural practice ranges from 29% in Goa,<sup>6</sup> 33.8% in Delhi,<sup>7</sup> 44% in Karnataka<sup>8</sup> to 55.95% at Haryana.<sup>9</sup> In contrast to Indian studies, majority of medical students from Nigeria,<sup>10</sup> Uganda<sup>11</sup> and Nepal<sup>12</sup> prefer to serve rural areas as compared to urban one. Thus, it is needed to understand differences in rural health care policies in these countries and India from doctor's point of view.

Rural background and primary education at rural areas were identified as the strong variable associated with the retention of health professionals in rural communities by various literatures.<sup>7,10,13,14</sup> This can be explained by the familiarity of medical students with rural setting and cultural norms. We observed that medical students with well-educated parents had less favourable attitude towards working at rural areas similar to study conducted by Saini et al.<sup>7</sup> and Singh et al.<sup>14</sup> Medical students from I<sup>st</sup> and II<sup>nd</sup> years of undergraduation showed more willingness to work in rural area may be because of poor knowledge regarding working conditions in rural area.<sup>14</sup>

For the medical students who were interested to work in rural area, the major reason for that decision was to provide service to the poor/underprivileged (social service) as there is scarcity of health care facilities in rural area. Similar finding was reported from various literatures in India<sup>6,7</sup> and other countries like Nigeria<sup>15</sup> and Uganda<sup>16</sup> where the major reasons were to provide medical services to the poor and the vulnerable respectively. In study by Dutt et al.<sup>8</sup> medical students wish to work in rural area to gain experience, to get postgraduate seat and for monetary benefits.

The reasons for not willing to work in a rural area included scarcity of health facilities, less money and bad living conditions. Many studies had mentioned a similar list of common factors which revealed the role of government in improving working conditions in rural areas.<sup>7,8,16,17</sup> This to an extent paints the same picture of other rural and underserved areas of the world with regards to health service delivery and the need for concerted action in-order to improve delivery of services and patient care in these areas.

#### 5. Conclusion

Majority of the medical students participated in this study were unwilling to practice in rural area after their qualification. Interest towards rural practice is significantly higher among Ayurveda students and students from rural background. Lack of social amenities, scarcity of health facilities, bad living conditions and inadequate remuneration emerged as potential barriers to students opting for a career in rural health. These findings suggest us about the attitude of medical students to rural health care and explore various factors such as rural residence which have influencing role for intending medical students towards rural practice.

#### 6. Conflicts of Interest

No potential conflict of interest relevant to this article was reported.

#### 7. Source of Funding

None.

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