International Journal of Community Medicine and Public Health
Sreeletha SM et al. Int J Community Med Public Health. 2025 Apr;12(4):1689-1694
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20250912

Original Research Article

A cross-sectional study on medical intern's attitude and related factors towards working in rural areas and their future career preferences

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Received: 21 February 2025
Revised: 15 March 2025
Accepted: 18 March 2025

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ABSTRACT

Background: Shortage of health staff including doctors has been a disadvantage in the rural health system of India.Competency-Based Medical Education (CBME) under National Medical Council, has recently implemented family adoption (FAP) program into undergraduate medical curriculum to provide the students with early community exposure, to orient them to the rural set up of our country. This study aims to understand the attitude of MBBS interns regarding working in rural areas and their career preferences.
Methods: An online cross-sectional study was done among 180 medical interns in a tertiary care center located in a rural area using a semi-structured questionnaire after obtaining informed consent. Data was analyzed using SPSS.
Results: Of the 180 interns surveyed, majority were in the age group 24-26 years, there were 121 females and majority resided in urban areas. Even though only 23.3% preferred to work in rural areas, majority of them (53.3 %) had a positive attitude towards working in rural areas. Female interns and those residing in rural areas had more positive attitude. Statistically significant association was found only between those interns residing in rural areas. It was found that those interns who preferred to work in rural areas had a more positive attitude towards rural work place.
Conclusion: The attitude of medical interns towards working in rural areas was satisfactory. By modifying infrastructure of hospitals and work place environment their attitude would change.

Keywords: Attitude, Medical interns, Rural area, Career preferences

INTRODUCTION

The health care landscape in India faces significant challenges especially in rural areas, where access to medical services is limited and the burden of disease often outweighs the availability of health care professionals. Kerala known for its high literacy rates and advanced health care infrastructure in urban areas still struggles with uneven distribution of medical professionals between urban and rural regions.

Also, healthcare in India is at a crossroads meaning that the health care system is currently facing a critical juncture where significant decisions need to be made about its future direction, often due to multiple competing factors like rising costs, technological advancements, changing demographics and policy challenges requiring a

fundamental shift in how health care is delivered and accessed. As a nation, we have made noteworthy progress across several dimensions, and India is healthier today than ever. We have successfully eradicated multiple diseases, including smallpox, polio and guinea worm disease. HIV infections and AIDS-related deaths have dropped significantly. Despite evolution on multiple fronts, however, India still struggles with substantial issues and gaps in its healthcare system. Healthcare is under-served and under-consumed.[1]

One of the pivotal factors influencing the distribution of medical professionals is the attitude of medical interns and newly graduated doctors towards working in rural areas. Medical interns are at a critical juncture in their medical careers and their attitudes, perceptions and decisions about working in rural settings can significantly impact the health care workforce in these under-served regions. Managerial challenges are many to ensure availability, accessibility, affordability and equity in delivering primary health care services to meet the community needs efficiently and effectively where rural population in India is around 65%.[2-4]

Literature search has shown various reasons like better living conditions, schools for their children, higher income, promotion opportunities, social recognition and greater job satisfaction tends them to cluster in cities. Excessive workload, inadequate infrastructure, lack of proper supervision and support lack of professional development opportunities, were considered as factors which hinders them from working in rural areas. Lack of accessibility to and from rural areas was also considered as a great obstacle faced regarding working in rural areas.[5,8] Better connectivity of rural areas by roads can be achieved as in the western countries which can promote easy accessibility.[6]

To achieve universal health coverage as envisaged in National Health Policy, primary health care is an important component especially in rural and hard to reach areas.[7] Competency-based medical education (CBME) under national medical council, has implemented family adoption (FAP) program into undergraduate medical curriculum to provide the students with early community exposure, to orient them to the rural set up of our country and at the same time, emphasizing the under graduates on the importance of primary health care for the rural population which is the need of the hour.

The choice made by medical students regarding their career specialty is not only an important decision for their future but it also affects the availability and the quality of services the country's health system is able to provide. Medical interns prefer to pursue PG after internship, which prevents/delays them from entering rural areas. Since there is scarcity of PG coaching centers in rural areas, majority of the doctors after internship prefer to work in urban area as these PG coaching centers are plenty for their career growth. Health care system evolves over time. What was 5-10 years ago might not hold the same today. The recent changes in health care delivery like telemedicine, might have altered their attitude towards working in rural areas.

Hence this study aims to explore the attitudes, the related factors towards working in rural areas and their career preferences.

Aims and objectives

To assess the intern's attitude and related factors towards working in rural areas. To analyses their career preferences

METHODS

A descriptive cross -sectional study was carried out among 180 medical interns from different batches of internship, in Sree Narayana Institute of Medical Sciences, a private medical college in Ernakulam District, Kerala, using universal sampling technique.

The minimum sample size calculated was 163 medical interns by using the formulae n=z 2pq/d 2.

Where, n-sample size, z- alpha risk express (1.96), p-prevalence, q is(1-p), d-allowable error.[4]

Interns who were present and who gave consent were included in the study. Interns who were on long leave during the study period and those who did not consent were excluded from the study. Study duration was 3 months (October 2024 to January 2025). Prior to data collection, approval from Institutional ethical committee (ECR/661/Inst/2014/RR-21) and permission from institutional head and internship coordinator was also obtained. Data was collected by google sheet posted in the various internship batches WhatsApp groups. A predesigned, pretested semi structured questionnaire containing the socio demographic details & questions related to factors to work in rural areas were included. Respondents were asked to rank factors that influence their attitude regarding working in rural areas on a 5-point Likert scale with a score of 1 representing a strong positive influence for opting for rural service, whereas a score of 5 representing a strongly negative influence.

Data was analysed using SPSSV-25 software and all qualitative data were expressed in frequencies and percentages. Chi square test was used for association between categorical variables.

RESULTS

Out of 180 medical interns who participated in this study,121 (67.2%) were females and 59 (32.8%) were male. Majority of the interns 127 (70.6%) belonged to the age group 24 to 26 years. The largest group (162) 90% interns were from the batches who had joined after the

year 2015, the rest (10%) belonged to those who had joined MBBS before the year 2015. More than half of the study participants (55%) were residents of urban areas, and 45% resided in rural areas (Table 1).

Table 1: Distribution of study participants based on socio demographic characteristics.

Characteristics	Category	Frequency (N)	%
Age group (years)	18-20	1	0.6
	21-23	20	11.1
	24-26	127	70.6
	27-29	26	14.4
	30-32	6	3.3
Gender	Female	121	67.2
	Male	59	32.8
Place of residence	Rural	81	45
	Urban	99	55
MBBS batch	<2015	18	10
	>2015	162	90

Table 2: Distribution of total score of medical interns' attitude towards working in rural areas.

Total score of medical interns attitude towards working in rural areas	Frequency	%
≤45	84	46.7
>45	96	53.3
Total	180	100.0

Table 3: Distribution of factors related to medical interns attitude towards working in rural areas.

Factors	Strongly disagree (%)	Disagree (%)	Undecided (%)	Agree (%)	Strongly agree (%)
Rural area posting should be made compulsory after MBBS?	5 (2.8)	16 (8.9)	33 (18.3)	77 (42.8)	49 (27.2)
Rural area posting provides an opportunity for independent working?	2 (1.1)	11 (6.1)	15 (8.3)	104 (57.8)	48 (26.7)
Rural area provides a good exposure of General practice?	2 (1.1)	8 (4.4)	13 (7.2)	106 (58.6)	51 (28.3)
Rural area helps to build confidence as a clinician?	1(0.6)	8 (4.4)	21 (11.7)	98 (54.4)	52 (28.9)
Rural area provides more job satisfaction?	1 (0.6)	28 (15.6)	64 (35.6)	58 (32.2)	29 (16.1)
Rural area helps in earning more money?	17 (9.4)	62 (34.4)	76 (42.2)	22 (12.2)	3 (1.7)
Working in rural areas helps in better recognition among medical faculty?	6 (3.3)	45 (25.0)	78 (43.3)	48 (26.7)	3 (1.7)
Working in rural areas helps to be recognized among the community?		17 (9.4)	39 (21.7)	10.6 (58.9)	18 (10.0)
Rural area has adequate hospital infrastructure?	21 (11.7)	94 (52.2)	44 (24.4)	20 (11.1)	1 (0.6)
Rural area has good residential facilities for doctors?	28 (15.6)	79 (43.9)	47 (26.1)	23 (12.8)	3 (1.7)
Working in rural area limits the professional growth?			59 (32.8)	104 (57.8)	17 (9.4)
Working in rural area reduces the opportunities to upgrade knowledge and skill?	5 (2.8)	51 (28.3)	54 (30.0)	57 (31.7)	13 (7.2)
Working in rural areas reduces the connectivity with cities	2 (1.1)	35 (19.4)	41 (22.8)	84 (46.7)	18 (10.0)
Working in rural areas will lead to isolation from family and relatives?	5 (2.8)	40 (22.2)	47 (26.1)	70 (38.9)	18 (10.0)
Working in rural areas is a problem in schooling for children?	1 (0.6)	22 (12.2)	44 (24.4)	85 (47.2)	28 (15.6)

Table 4: Association of Medical intern's attitude towards working in rural areas and various factors.

Factors	Category	Total Score of Medical intern's attitude towards working in rural areas				P value
		≤45 (Negative)		>45 (Positive)		
		N	%	N	%	
Age group (years)	≤23	14	66.7	7	33.3	0.107
	24-26	60	42.9	80	57.1	
	>26	10	52.6	9	47.4	
Gender	Female	52	43	69	57	0.155
	Male	32	54.2	27	45.8	
Place of residence	Rural	36	44.4	45	55.6	0.589
	Urban	48	48.5	51	51.5	
Where would you prefer to work?	Rural	13	31.0	29	69.0	0.020
	Urban	71	51.4	67	48.6	
Batches	≤2015	8	44.4	10	55.6	0.842
	>2015	76	46.9	86	53.1	

Table 5: Association between medical intern's preferences for working in Private versus Government sectors, based on their preference for rural or urban area.

Where would you prefer to work?	If urban or Rural				P value
	Private		Government		
	N	%	N	%	
Rural	7	16.7	35	83.3	<0.001
Urban	73	53.3	64	46.7	

Table 6: Distribution of study participants based on career preferences.

Streams of career after Internship	Category	Frequency (N)	%
Preference of medical subjects for post-graduation	Clinical medical subject	158	87.8
	Non clinical medical subject	14	7.8
	Para clinical medical subject	8	4.4
Preference of other streams apart from medical subjects	Masters in hospital administration, MBA Hospital and Health systems	83	46.1
	Public health care administration	44	24.4
	Indian Civil Service	53	29.4

Out of 180 medical interns, 96 (53.3 %) had a positive attitude towards working in rural areas after their internship when compared to 84 interns (46.7 %) who had a negative attitude. The mean total score was found to be 46.26+ 6.41, the minimum score was 27.0 and maximum score was 65.0 (Table 2). Multiple factors were responsible for the lack of motivation among medical interns to work in rural areas. The factors influencing the attitude of interns to work in rural areas are shown in Table 3.

Among these factors, those showing strong positive influences were the following: Majority of the medical interns were of the attitude that rural area postings should be made compulsory, majority were of the opinion that working in rural area would provide opportunity to work independently, would provide a good exposure to general practice, would help to build confidence to deal with patients, would provide more job satisfaction & better recognition among the community. The factors having negative influences were the following, health centres in rural areas lacked adequate hospital infrastructure, rural areas lacked good residential facilities for doctors, fear that working in rural areas would limit their professional growth, fear of reducing their opportunity to upgrade knowledge and skill, fear of reducing their connectivity with cities, fear of isolation from family and relatives, would affect the schooling of their children.

The association of various factors and total score of medical interns' attitudes toward working in rural areas, were assessed taking into consideration for mean attitude score 45 (Negative ≤45 and positive attitude >45). Among those aged ≤23 years, 66.7% of the respondents had a negative attitude (score ≤45), For the 24-26 years age group, attitudes are more evenly distributed, with 42.9% holding a negative attitude and 57.1% a positive attitude. In the >26 years group, 52.6% exhibit a negative attitude. The p value of 0.107 suggests that there is no

statistically significant difference between the attitudes of the different age groups. Among female interns, 57.0% had a positive attitude (score >45) while only 45.8% had a negative attitude. There was no statistically significant difference. Among Interns residing in rural areas, 55.6% had a positive attitude towards working in rural area while only 51.5 % of those residing in urban areas had a positive attitude to work in rural set up but it was not statistically significant (p- value 0.589).

Among 42 interns who preferred to work in rural areas 69% had a positive attitude and among the 138 who preferred to work in urban areas only 48.6% had a positive attitude towards working in rural area. The p-value of 0.02 indicates a statistically significant difference, suggesting that those who prefer to work in rural areas, tend to have a more positive attitude when compared to those preferring to work urban areas. For interns from batches ≤2015, 55.6% have a positive attitude. For those from batches >2015, only 53.0% had a positive attitude. There was no statistically significant difference between these batches attitudes toward rural work.

Majority 138 (76.7%) preferred to work in urban areas, while 42 (23.3%) opted for rural areas. For those who prefer to work in rural areas, a significant majority (83.3%) preferred to work in the government sector, while only 16.7% opted for private sector. For those who preferred to work in urban areas, a higher proportion (53.3%) opted private sector, while 46.7% opted for the government sector. The p value of <0.001 indicates a statistically significant difference in the preferences between the rural and urban groups.

DISCUSSION

In our study out of 180 Interns surveyed, majority belonged to the age group 24 to 26 years. Majority were females (67.2%) similar to study done by and unlike study done by Sarathi et al at Orissa were majority of medical interns were males. In our survey 55% of interns resided in urban areas, similar to studies done in other states of India. Majority of the interns of our study belonged to the batch of the year 2015 and above.[8-12]

We assessed the attitude and preference of medical interns towards working in rural areas. while both attitude and preference are related to medical intern's inclination towards working in rural areas "Preference" refers to active choice or desire to work in a rural setting, whereas, "Attitude" encompass their overall perception, feelings and beliefs about working in rural area. which can be positive /negative or neutral. In our study 96 interns (53.3 %) showed a positive attitude towards working in rural area unlike the studies done in other parts of India and outside India, where majority of the interns and medical students had a negative attitude towards working in rural areas.[4,8,9,11-15] Literature search revealed that only few studies showed positive attitude of interns to work in rural areas. A recent study done by Kunde et al in Maharashtra and also in a five-country survey study done among final year medical students showed that interns had more inclination to work in rural areas.[16,17]

The various factors taken into account for looking into the factors associated with their attitudes, it was seen that those interns in the age group of 24-26 years had a more positive attitude, similar to studies done in different states of India, also it was seen that female interns had more positive attitude towards working in rural area compared to male interns, but it was not statistically significant. Studies done in other parts of India also showed that female interns had more positive attitudes compared to male interns .[4,11,15] Studies done by Sarathi et al in Orissa & Kunde et al, in Maharashtra showed that male interns had a more positive attitude towards working in rural area compared to female interns.[11,16] In our survey, among the interns residing in rural areas 55.6% had a positive attitude compared to those residing in urban areas and this was found to be statistically significant (p value of 0.02). Similar findings were observed in studies done by Sarita et al, Ranganatha et al unlike our study, Sarathi et al in Orrisa, observed that interns residing in urban area had a more positive attitude towards working in rural area.[4,8,11,14,15.]

In our study, the preferred place of work, for the majority (76.7%) was in urban areas, while only 23.3% opted to work in rural areas. This was similar to studies done in India.[4,11,14] The reasons for preference to work in urban areas were better working facility, better connectivity, better job opportunities and better family life. These reasons were almost similar to our study. In our study among those preferring urban or rural areas, 55.6% would choose to work in the government sector, and 44.4% in the private sector. For those choosing the government sector, 54% prefer working in a Medical Colleges, while 46% would rather work in a Health Center.

All the interns surveyed would prefer to do their post-graduation after internship, similar to a study done by Vaishaligaikwad et al in Bangalore and almost all in study done by Pallavi et al in Maharashtra.[9,16] Unlike in olden days procuring post-graduation degree is a must since people seeking medical care prefer a post graduate doctor with better knowledge than to a graduate doctor. This fact is universal and known to all especially the young doctors. Considering the preference for the subjects for post-graduation, 87.8% preferred clinical subjects, non-clinical subjects (Anatomy, Physiology, Biochemistry) was preferred by 7.8%. Paraclinical medical subjects (Pathology, Microbiology, pharmacology, forensic medicine and community medicine) was preferred by 4.4 %. Given choices, the other options they would prefer after MBBS, were masters in hospital administration (46.1%), public health administration (24.4%) and Indian civil service (29.4%). Since the data was collected exclusively from interns at a single private medical college the findings may not be fully representative of the broader population of medical

interns particularly those from different geographical regions and different public medical colleges.

Limitations

Since the data was collected exclusively from interns at a single private medical college the findings may not be fully representative of the broader population of medical interns particularly those from different geographical regions and different public medical colleges.

CONCLUSION

This study revealed that the attitude of medical interns towards working in rural areas was satisfactory unlike in majority of the studies done in other parts of India. This positive attitude could be due to the fact that our institution is located in a rural area with well-planned hospital infrastructure, with good accessibility and connectivity with the nearby towns and airport. This clearly shows that the attitude of medical interns in India to work in rural areas can be improved by modifying infrastructure of hospitals in rural areas and also the work place environment. Better connectivity with roads and better recreational, shopping and schooling facilities would improve their attitude to work in rural areas. Thereby, encouraging the buildup of healthcare infrastructure to enable the shift in India's healthcare system over to the rural and underserved areas, where there is less than one-third of the nation's hospitals, doctors and bed.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Sreeletha SM, Thomas AM, George PS, Kalliath JD, Komban VX. A cross-sectional study on medical intern's attitude and related factors towards working in rural areas and their future career preferences. Int J Community Med Public Health 2025;12:1689-94.