

ORIGINAL ARTICLE

Improving workforce in the health sector: A survey on the motivation of medical students and residents on willingness to practice in the rural community

Fauzia Butt¹, Usman Mahboob², Kainat Javed³

ABSTRACT

Background: Practice in a rural community as a future career choice is influenced by a large number of factors but motivation is the key factor for doctor, and it plays an important role in attraction, recruitment, and retention of medical graduates for rural practice.

Aim: To determine the willingness of medical students and house officers to practice in a rural community and to identify the factors that influence their motivation.

Methods: This cross-sectional survey was conducted in June 2018 in two public and one private-sector medical college. Two hundred and forty fourth & final year medical students and house officers participated in this study. Participants were requested to fill the Performa and the results were analyzed using SPSS 21.

Results: Out of 240 participants, 159 (66.3%) medical students and house officers showed a willingness to practice in a rural community, and 113 (47%) showed likely intentions to work in a rural community. Motivating factors were health and curriculum-related factors and de-motivating factors were personal, health facilities & health policy-related.

Conclusion: Motivation is the key determinant in working lifespan strategy of the health workforce. Both internal and external motivation predicts future career choices of doctors for rural placement. Hence, appropriate planning, refinement in educational programs, remuneration in form of financial incentive, initiation of scholarship schemes and mandatory rotations to serve in rural areas, effective support of health system, and job safety in addition to selection policy at the induction of training program remove major obstacles in shortage of workforce in the health sector.

Keywords: Motivation, Medical Graduates, Carrier Choices, Community Based Medical Education, Rural Practice

Introduction: The health workforce is a bottleneck of the health system of any country, so the production of good quality doctors proportionate to country's demand is the need of time. 'Improving health workforce' report by the world health organization (WHO) in 2006 estimates that there are 57 countries in the world with a severe shortage of health workforce. More than 4 million health workers are required to fill the gap in health workforce.(Campbell et al., 2013) Low and middle-income countries including Pakistan are among those South East Asian countries that face a severe shortage of workforce in

the health sector(Gjoni et al., 2015). One of the main reasons for this shortage is the migration of doctors from rural to urban areas.

To address this current and emerging issue of shortage of rural health force in low and middle-income countries current health system needs different strategies to reduce this gap(Silvestri et al., 2014). One of the strategies is working lifespan approach; a dynamic strategy in retaining the health workforce and global preparedness to deal with universal health coverage by 2030. This approach focuses on the framework of health care workforce when they enter in a medical college; they spend their time in dealing with health problems as working force and, lastly when they exit.

More than 50% of the world population lives in rural communities but less than 25% of physicians provide service to the community(Budhathoki, Zwanikken, Pokharel, & Scherpier, 2017). Lack of motivation of medical students to practice in

1. Department of Obstetrics & Gynecology Sharif Medical and Dental College/ SMCH
 2. Institute of Health Professions Education and Research, Khyber Medical University, Pakistan
 3. Department of Medical Education , University of Lahore, Pakistan
- Correspondence:
Dr. Fauzia Butt
drfauziabutt@hotmail.com

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the rural community is a major problem faced by Pakistan and other low and middle-income countries. Studies from South East Asia and Africa show that 1 out of every 10 medical graduates is willing to work in a rural community (Borracci et al., 2015). Career choice to practice in the rural community is influenced by a large number of factors but motivation is the key intention factor in the working life span of doctors that plays an important role in attraction, recruitment, and retention of medical graduates for rural practice. Both external and internal motivation interplay in pushing and pulling of medical graduates (Mir, Shaikh, Rashida, & Mankani, 2015).

There is a lack of national studies to address the issue of shortage of rural health force. Hence there is an urgent need to investigate the factors that influence the motivation of medical graduates to practice in the rural community. Understanding the willingness of medical students and identifying the factors that influence their motivation will help the government and medical colleges in development and implementation of policies for improvement in working life span of medical graduates as strategy defined by World Health Organization (WHO) (Goel, Angeli, Singla, & Ruwaard, 2018). The objective of this study was to determine the willingness of medical students and house officers to practice in the rural community and to identify the factors that influence their motivation.

Methods: This cross-sectional survey was conducted on 180 medical students and 60 house officers, in two public-sector medical colleges and one private-sector medical college.

Data was collected on socio-demographic characteristics including age, gender, medical student or house officers, year of study, marital status, place of birth, current residence, educational status of mother and father and their profession.

Student's motivations were inquired at the time of admission in medical college. Student's willingness to work in a rural community was assessed and the degree of intention to work in a rural community was assessed on the Likert scale. The scale ranged from 1 to 4, in which 1-denoted '(will definitely not work)', 2- '(will unlikely to work)', 3- '(will likely to work)', 4 - '(will definitely work)'. Preference to work in primary and secondary health care centers in the rural community was also analyzed. Motivating and de-motivating factors were also assessed on a Likert scale.

Data was analyzed on SPSS 21. Responses from participants were coded and entered into SPSS 21. Descriptive analysis was carried out. For numerical data mean and the standard deviation was calculated. For categorical data, percentages and frequencies were calculated. P-value of <0.05 was used to indicate statistical significance.

Results: During this study, a total of 240 medical students and house officers responded, out of which 164 (68%) were females and 75 (31.3%) were males. Mean age of the study population was 23.29 ± 1.80 years. Most of the students 210 (87.5%) were unmarried while 30 (12.5%) were married. About 53 (21.8%) of students had rural births while 187 (73.2%) had an urban background. Only 4 (6.7%) of students were currently living in a village. In this study 86 (35.8%) fourth-year medical students, 94 (39.2%) final year students and 60 (25%) house officers participated. Eighty five percent of students participated in the study were from private medical institutes and 15% from public medical institutes.

Regarding internal and external motivating factors to join the medical profession about 221 (92.1%) of students were motivated at the time of admission with a desire to help others. 159 (66.3%) medical students showed a positive response for willingness to practice in the rural community and 113 (47%) showed likely intention to work in a rural community. When inquired about their placement of choice in the rural community, 68 (28.3%) opted for the primary health care center, 143 (59.6%) for secondary health care center and 28 (11.7%) for other tertiary care hospitals. 'Personal and lifestyle factors' i.e. background characteristic, when compared with the willingness to practice in a rural-community, gender (0.02), place of birth (0.047), current residence (0.041), year of medical graduation (0.045), and father profession (0.00), showed significant association (P-value <0.05).

When medical students and resident house officers were explored about motivations provided in 'medical college' and in curriculum during teaching, about 180 (75%) were of the view that medical colleges lack such intervention strategies that will improve motivation and retention of medical graduates and 136 (57%) perceived that implementation of community-based education and services as teaching strategy during teaching improves motivation to work in rural community.

Most of the graduates had the view that internal motivating factors i.e. 'health factors' that influence their willingness were: less experienced health care professionals 78 (32.5%), exposure to wide spectrum of disease 72 (30.3%) and 101 (42.1%) agreed that rural placement provides an opportunity to deal with community health problems while external motivating factors i.e. financial incentive 68 (28.6%), and selection policy 90 (37.8%) contribute to rural placement. (Table 1)

Barriers that influence the rural placement were largely 'personal factors' including language barrier 84 (35.3%), lack of security 110 (46.2%), lack of accommodation 104 (43.3%), family issues 82 (34.3%), schooling of children 103 (42.9%) and limited professional opportunities 103 (42.9%). Another barrier

that influences their motivation includes 'health facilities & health policy related factors' i.e. Poor infrastructure 102 (42.5%), political instability 84 (35.3%), poor government policies 110

(46%) less salary package 73 (30.4%) lack of technology 105 (43.8%) and political influence 87 (36.3%). (Table 2)

Table 1: Motivating factors that influence willingness to work in a rural community

Motivating factors	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Less experienced healthcare professionals	39 (16.3%)	37 (15.4%)	44(18.3%)	78(32.5%)	41(17.2%)
Friendly environment	29 (12.1%)	74(30.8%)	58 (24.2%)	57(23.8%)	20(8.3%)
Practice location	19 (8%)	64 (26.9%)	64 (26.9%)	55(23%)	36 (15%)
Financial incentives	19 (8%)	47(19.7%)	63(26.5%)	68(28.6%)	41(17.2)
Selection policy	21 (8.8%)	21(8.8%)	29 (12.1%)	77 (32.4%)	90 (37.8%)
Exposure to a wide spectrum of disease	28 (11.8%)	51 (21.4%)	56 (23.3%)	72 (30.3%)	31(13%)
Opportunity to deal with community health problems	16 (6.7%)	32 (13.4%)	52 (21.7%)	101(42.1%)	38(5.9%)

Table 2: De-motivating factors that influence willingness to practice in a rural community

De-motivating factor	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Language barrier	27 (11.3%)	61 (25.4%)	41(17.1%)	84 (35.3%)	25(10.5%)
Lack of security	15(6.3%)	28 (11.7%)	27(11.3%)	110(46.2%)	58 (24.4%)
Political instability	14(5.9%)	33(13.9%)	40 (16.8%)	84 (35.3%)	67 (28.2%)
Poor infrastructure	9 (3.8%)	11 (4.6%)	23 (9.6%)	102(42.5%)	94 (39.2%)
Lack of accommodation and housing facilities	11 (4.6%)	10 (4.2%)	32 (13.3%)	104(43.3%)	81(33.8%)
Family issues	11 (4.6%)	36 (15.1%)	37 (15%)	82 (34.3%)	73 (30.5%)
Schooling of children	7 (2.9%)	16 (6.7%)	20 (8.3%)	103(42.9%)	92 (38.3)
Limited professional opportunities	9 (3.8%)	8 (3.3%)	23 (9.5%)	97(40.41%)	103(42.9)
Poor government policies	9 (3.8%)	14 (5.8%)	21 (8.8%)	85 (35.6%)	110 (46%)
Less salary package	14 (5.8%)	35 (14.6%)	45 (18.8%)	73 (30.4%)	72 (30.1%)
Lack of technology	9 (3.8%)	13 (5.4%)	16 (6.7%)	105(43.8%)	97 (40.4%)
Political influence	8(3.3%)	22 (9.2%)	43 (17.9%)	87 (36.3%)	79 (33.1%)

Discussion: Health workers constitute two-third of global health force. Middle and low-income countries are suffering from a severe shortage of health workforce(Diwan, Minj, Chhari, & De Costa, 2013).To tackle the issue of unequal distribution in rural and urban areas and to fill the gap in the rural community, the main issues of concern globally is recruitment, training of doctors to serve underserved areas and their retention(Farmer, Kenny, McKinstry, & Huysmans, 2015). Concentrating on working life span strategy of retaining the workforce provides a strategic framework for this issue. In this way, the goal of the workforce is achieved that is "right worker with the right skill in the right place doing the right thing".

In this study, 159 (66.3%) of graduates and house officers showed willingness to practice in a rural community with 113 (47%) likely intention to work in a rural community which is

comparable to study conducted in China in which 52% were willing for rural practice(Liu, Zhu, & Mao, 2018). This study had a large sample size involving more than 5000 students in China involving third, fourth and final year medical graduates. Another study conducted in Ghana showed that 55.4% of graduates had the intention to work in rural practice(Agyei-Baffour et al., 2011).

However few studies conducted in India and Pakistan showed that the willingness to work in rural areas was only 40% and 30% respectively (Diwan et al., 2013; NAZIR, 2006). Our study stands out that we have taken opinions not only from graduates but also from house officers to strengthen the results.

Willingness to practice in a rural community is greatly influenced by personal factors but medical college factors, curriculum,

government health policies, and facilities in the health sector also play an important role (Budhathoki et al., 2017). On analysis of first factor of our theoretical framework 'personal and lifestyle factors' that promote focus of medical graduates to work in rural community was that more female (0.029), medical students and house officers with rural background (0.047), place of birth (.022), and current residence (0.041) influenced willingness to work in rural community. This has also been reflected in other studies from Argentina and Indonesia where more females with rural background prefer to work in rural areas (Borracci et al., 2015; Syahmar, Putera, Istatik, Furqon, & Findyartini, 2015). Though, in this study opinions were taken from medical graduates who were already going through a community-based program.

In the current study, the educational level of the mother (0.56) and father (0.195) does not show an impact on the willingness to practice. This has also been reflected in another study conducted in Pakistan in private medical college (NAZIR, 2006). Secondly its father professional background (0.000), which shows significant association. Most of the students have internal motivation for the desire to help others at admission in medical college but is not reflected on willingness to practice in a rural community (0.86).

Motivation is also affected during teaching and training in medical colleges when graduates are in working pipeline. Our study shows, that 4th-year students 67 (77.9%) as compared to 54 (64.28%) final year students and 38 (63.33%) house officers were willing to work in a rural community (0.045). This means in initial years of training exposure to rural practice will improve intentions to work. Reduced willingness among house officers at the exit of the workforce suggests that motivations decline with the passage of time if not address appropriately. Preference by younger medical graduates for rural practice has been observed in different studies but what makes them change is during the working pipeline (Hurst, 2014).

Curriculum related factors strongly motivate medical graduates but opportunities in the form of community-based education in the curriculum helps in pushing and retaining doctors in rural areas. In this study, more than 75% of graduates and residents accept that lack of community-based education during teaching and training in medical college. And in our study, students agreed that rural placement will provide an opportunity to deal with community health problems and wider exposure to the spectrum of diseases.

Studies from Nigeria and other countries also showed a significant relationship between exposure to rural areas and willingness to practice (Ossai et al., 2016). A similar study from Ghana showed that more than 60.3% students highlight

that community-based education and service (COBES) can provide an effective strategy to reduce cross border brain drain and shortage of health workforce (Amalba, van Mook, Mogre, & Scherpbier, 2016).

About 64% of south Asian population resides in rural areas (Silvestri et al., 2014). Selection and recruitment of doctor at the time of admission with rural background and establishment of medical colleges in peripheries could have a positive influence on the willingness to practice. In this study, most of the students are from private medical college but their willingness to serve the community and rural practice is around 159 (66.3%). Results of this study show that the establishment of a new medical college in private sector can prevent the shortage of health workforce and a public and private sector partnership can help to improve the health infrastructure of the country.

The biggest challenge in working pipeline strategy is the development of the framework of national health policies that remove the barrier in the motivation of medical graduates for rural retention (Kurji, Premani, & Mithani, 2016). As most of the students stated less salary package, lack of technology, poor infrastructure poor government policies, political influence and political instability, limited professional opportunities, and lack of security was a major barrier to work in rural areas. This poor framework of the health system has been reflected in our study which establishes that more doctors are willing to work in secondary health care centers as compared to primary health care centers.

Financial incentives, scholarship programs and mandatory attachment in rural areas will improve retention of doctors and this has also been observed in this study that more students think that central induction policy favors 160 (32.4% to 37.4%) motivations of medical graduates and poor policies 195 (35.6% to 47%) de-motivates the graduate's willingness. Hence, just the placement of medical graduates in primary and secondary health care centers before postgraduate recruitment program (central induction policy) as an incentive is not sufficient. Rather, the introduction of this program should be at the exit of the future career program when external motivating factors influence the individual career choice. Introduction during working pipeline when strong internal motivations exist among medical graduates for a desire to help the community will help in the retention of more doctors in rural areas.

Limitation of this study was that comparison with other public medical colleges was not done. We recommend further studies must be carried from those doctors who have worked in primary and secondary health care centers before recruitment into the residential program (central induction policy). In addition, the influence of the community-based program on rural placement

in Pakistan can only be studied once new curricular reforms made by PMDC introduced in medical colleges are fully implemented.

Conclusion: Motivation is the key determinant in working life span strategy and is affected by a large number of factors both intrinsic and extrinsic. Intrinsic motivation is largely affected by personal factors, but external motivating factor directly or indirectly influences the individual as well. This motivation is greatest when medical graduates enter into medical school and gradually erodes with the passage of time when they remain in working life span and when they exit. So, both internal and external motivation predicts future career choices of doctors for rural placement.

Appropriate planning, refinement in educational programs, remuneration in form of financial incentive, initiation of scholarship schemes and mandatory rotations to serve in a rural area, effective support of health system, and job safety in addition to selection policy at the induction of training program remove major obstacles in shortage of workforce in health.

One of the limitations of the study was that the questionnaire was not validated before the study. Pilot testing can be done, and validity and reliability of the questionnaire established in the next study.

Declaration of interest:

The authors report no conflict of interest.

Author's contribution:

- Fauzia Butt : Conception and design of the work; & the acquisition, analysis, & interpretation of data for the work
- Usman Mahboob : Critical Review and final approval of the version to be published
- Kainat Javed : Drafting the work & revising it critically for important intellectual content

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