

Clinical Medicine Undergraduates' Reluctance to Engage in Primary Care

Yingli Xue¹, Ziyi Shi²

¹Centre for Medical Language and Culture Studies, Xi'an Medical University, Xi'an, Shaanxi, 710021, China

²School of Clinical Medicine, Xi'an Medical University, Xi'an, Shaanxi, China, 710021

Keywords: Clinical Medicine Undergraduate; Primary Care; Competency-Based Curriculum

Abstract: Objective: To explore into the factors contributing to clinical medicine undergraduates' reluctance to engage in primary care and offer solution to the shortage of health care providers in rural areas of China. *Method* Electronic questionnaire was designed to collect the feedback of clinical medicine undergraduates. A total of 556 valid questionnaires were collected. The respondents are the fifth year clinical medicine majors. *Result* Based on data analysis, the findings include clinical medicine undergraduates (CMUs) ' inclination of working in the rural areas, gender difference of CMUs' inclination of working in medical field, feasibility of rotation system, CMU's motivation for primary care upon graduation, CMUs' preference to working in other fields and CMUs' suggestions for the solution to the shortage of rural doctors. *Conclusion* Based on the research results, the Chinese government should continuously offer favorable policies and financial support to attract and retain more health workforce for the rural areas. Additionally, it is vital to improve the living conditions and social status of health care providers. Significantly, clinical medicine curricula need to shift to a competency-based instead of knowledge-based curriculum. Also, medical universities should offer further guidance in encouraging clinical medicine undergraduates to work in the rural areas. The findings not only provide reference for occupational guidance in medical universities, but also are beneficial for the Chinese government to develop more effective and feasible strategies to meet the people's increasing needs for the availability of primary care.

In recent years, shortages and an uneven distribution of the health workforce have been concerns of government globally. Chinese government formulated a series of systems and policies to improve primary care in rural areas. the Chinese government started a rural-oriented tuition-waived medical education (RTME) program in 2010, which aimed to make enroll students from rural areas to work in rural places for 6 years after their graduation. However, the number of Chinese medical school applicants has decreased greatly in recent years, even in the best medical schools, only a few applicants reach the required score line [1]. The China government announced a goal of achieving 300,000, or 2-3 GPs per 10,000 population by 2020.[2]

On January 24, 2018, the Chinese State Council announced a new goal of 700,000 total GPs in China (5 per 10,000 by 2030), an additional increase of 500,000 over a 10-year period.[3] China is a country with a large population in the world, especially a large agricultural country. The rural population accounts for about 51% of the total population in China. There are about 600,000 medical graduates every year. Still, there is a big gap between the increasing needs of rural doctors and the availability of rural doctors in China. Previously, scholars home and abroad explored the impact of urbanization on clinical medicine undergraduates' employment intentions towards primary health-care institutions [4], characteristics of Japanese medical students' rural practice intention [5]. This research aims to explore into clinical medicine undergraduates' preference and reluctance to serve in rural areas and its impact on china's sustainable development. Ultimately, this study aims to improve the shortage of rural doctors and ensure the availability of primary care thus to boost China's sustainable development.

1. Participants & method

Totally 556 clinical medicine undergraduates (CMUs) took part in this research, among whom there are 190 male students and 366 female students. Electronic questionnaire was designed to collect feedback. A total of 557 valid questionnaires were collected. The respondents are the fifth year clinical medicine undergraduates.

2. Data analysis

2.1 CMUs' inclination of working in the rural areas

The impact of urbanization was positively correlated to CMUs' inclination of working in rural areas. Predictably, 1 billion people will live in Chinese cities by 2030[6]. Similarly, in Indonesia, only 8.7% of medical students wanted to practice in rural areas, and the experience of living in rural areas affected the interest of the students for a career in rural areas[7]. Additionally, research among medical students in Japan also showed that growing up in a rural area are more likely to opt for rural practice[4]. The survey shows that only 6.11% of clinical medicine undergraduates are very interested in working in the rural areas. 50.36% of them said they are willing to work in rural areas. 43.53% of them responded that they are not really interested in and don't want to work in the rural areas. In 2015, less than 6.2% of medical students would prefer to work in primary healthcare institutions. Those not from a one-child family and those born in a rural place were more likely to work in a primary healthcare institutions. Previously, in the year of 2013, 2014 and 2015 respectively, 51.4%, 52.7% and 65.0% of CMUs chose to take Postgraduate Entrance Exam in China to make themselves more qualified for working in the city hospitals[4]. Gladly, there is an increase of CMUs' willingness to serve in the rural areas.

2.2 Gender difference of CMUs' inclination of working in rural areas

Based on the in-depth analysis, the results indicated that 55.55% of male medical students are willing to work and live in the rural areas, while 63.89% of male medical students, mostly from cities, are unwilling to go to the basic medical work. Among female medical students, 62.50% are from rural areas and 69.23% are from urban areas. Based on the analysis results, it can be seen that medical students from rural areas understand the hardship and inconvenience of rural life prefer to work for their community upon graduation, so as to help more rural people get primary care and alleviate the problem of shortage of rural doctor resources. On the contrary, medical students who have lived in cities don't choose to work in the rural areas.

2.3 The feasibility of rotation system

Table 3 is about CMUs' opinions on the practice that big hospitals should take rotation system to regularly send doctors to rural hospitals for primary care to ensure rural medical personnel. The survey results show that 80.58% of medical students think rotation system is feasible. Rotation system has two advantages. First, medical staff can be supplemented accordingly by rotation system. Secondly, doctors from major city hospitals can also train more rural doctors thus to attract more villagers to get primary care locally and thus to alleviate the overcrowding in big city hospitals. However, 19.42% of medical students believe that rotation system is not feasible. Lack of access to health workers in rural regions often leads to relatively high costs for rural residents seeking care at urban health facilities^[8]. The main reason is that rural areas are short of not only doctors, but also good medical equipment. Due to the fact that the village clinic is not well equipped, most of the problems of the sick in rural areas cannot be preliminarily solved, and eventually they will choose to flock to the big city hospitals. However, long-term rotation system will affect the personal life of urban doctors. Some CMUs admitted that they worked hard and dream of bettering their life upon graduation by living and working in the cities. Choosing to work in the rural areas means less pay and they can't apply what they acquire to clinical work due to the limitation of medical equipment. Living and working in the county was viewed less unattractive. From this analysis, it can be seen that the government's investment in rural medical care needs to be strengthened; hardware facilities

need to be supplemented. Ideally, the government should prioritize the balance of co-development of the cities and the countryside to ensure the harmonious development of China. Only with the bettering of infrastructure can the contradiction and medical students' hesitation to work for the rural areas can be effectively alleviated.

2.4 CMUs' motivation for primary care upon graduation

According to the survey result, 58.09% of medical students indicated that the government's strong policies support and financial support would be a strong motivation for them to go to the rural areas for primary care. 14.75% of CMUs good ecological environment in the countryside attract them for working in the rural areas. Still 27.16% of the respondents admitted they want to contribute to the sustainable development of the countryside. Concerning the impact of urbanization on health, urbanization increases income level, provides advanced medical services to more people, and makes health-related consumption more affordable. However, the increase of urban medical resources lag behind the increase of population and become more crowded. Together with the deteriorated environment and pollution, urbanization could have negative consequences on health^[9].

2.5 CMUs' preference to work in other fields

Based on the statistics in 2015, factors contributing to medical students intentions to work in primary healthcare institutions include hospital prestige, personal career development prospect, availability of healthcare facilities, income and urbanization level, which were considered most important by students, accounting for 89.7%, 86.3%, 79.5%, 72.6%, and 71.2% respectively. Economic development and size of the city/town are also important factors contributing to CMUs' employment intentions^[4]. Strikingly, only 22.12% CMUs will not choose to work for primary care.

2.6 Reasons for CMUs' reluctance to work for rural primary care

According to the survey results, 79.68% of CMUs believed that the main reason of the lack of health care providers is the slow development of rural areas, and many practical problems in life could not be solved. 59.35% of medical students think that the government should formulate more effective policies to support and develop medical care in rural areas. 52.52% of medical students think that it is not good to work in the rural areas due to the influence of public recognition of village doctors. 79.68% of CMUs responded there exists the underdevelopment of countryside and inconvenience of life in the countryside. 38.49% of CMUs point out the quality of the rural people themselves needs to be improved.

3. Improvement and suggestions for shortage of rural doctors

Three priorities for GP training in China include firstly increasing the number of GP trainers, secondly, improving the quality of care in community health centers where GPs typically work, and transitioning to a competency-based rather than knowledge-based curriculum.^[10] Currently, clinical medicine education is characterized by being knowledge-based. It is crucial to shift to a competency-based. In the U.S., social sciences and humanities premedical education is highly valued and medical students with social sciences and humanities were more likely to select primary care.^[11] Based on this, a new medical humanities education was adopted in Xi'an Medical University intended for CMUs and general practice undergraduates. Increasingly, research is done in approaches of multi-discipline, cross-discipline, inter-discipline and trans-discipline. Four teaching modules are characterized by combining literature, art, psychology and philosophy with medicine. Crucially, the teaching team composed of multidisciplinary teachers introduced their research achievements into classroom teaching and selected medical humanities related articles from British Medical Journal. The teaching focuses on competency-based medical humanities education practice by multidisciplinary integration and multidisciplinary team to develop empathetic & reflective competency of GP undergraduates to enable them to be competent for whole person medicine. Four teaching modules are intended for bridge the asymmetries between patients and health care providers. The asymmetries between patients and doctors include three

groups, namely, disease vs illness, objectivity vs. subjectivity, technical vs. existential, population vs. individual, utilitarianism vs. deontology, normative vs. descriptive, the map vs. the territory, numbers vs. words, quantitative vs. qualitative, reason vs. emotion, science vs. poetry^[12].

3.1 Literature & medicine module

Cancer-related, death-related and doctor image related, disease narration and poetry were introduced into classroom teaching. Teachers share interpretation of works with students in class. Poem reading is used for developing CMUs' empathy. Poetry is a good medicine. Wonderful poems arouse the emotional resonance helps the students to obtain the psychological comfort. GP undergraduates are happier both physically and mentally and love life more after reading poems. Reading poetry makes students better taste the truth, goodness and beauty of life, cultivate humanistic feelings, heal their soul and ease the pressure. Similarly, poetry reading can achieve the therapeutic effect. Writing poetry is a process of self-empowerment. Writing poetry is also a process of self-awakening.

3.2 Art & medicine module

Art & medicine module is composed of such three aspects as movies on Death, movies on Disease & Graphic Narratives. Medical humanities related movies are characterized by the linguisticity, aestheticity, medical ethicity, textuality, medical humanity and medical narrativity. One can live many times in movies. Next, concerning graphic narratives, medical pictures and paintings were introduced to facilitate GP undergraduates understanding of diseases, death and humanistic spirit by the profound connotation of medical images more intuitively. Medical paintings can connect souls and heal people. A series of medical movies were recommended to students, for instance, French movie titled *Amour, Oscar et la Dame Rose*, German movie titled *Honig im Kopf*, American movies titled *Wit*, *The Bucket List*, *Patch Adams*, *One Flew Over the Cuckoo's Nest* and *Something The Lord Made*, Indian movies titled *Guzaarish*, Japan movie titled *Okuribito* and Chinese movies titled *This Is Life* and *the Middle-aged Female Ophthalmologist*; Art & medicine module encourages CMUs to think about the meaning of life and fosters their achievement of behavior modes which is beneficiary for the realization of the humanistic medicine characterized by adopting empathetic and holistic approach by the improvement of communicative and relational skills.

3.3 Diversified humanities therapies

Humanities therapy emphasizes the well-being of individuals, trying to identify causes of mental problems and offer solutions. Significantly, medical humanities related articles from *British Medical Journal* was selected. Students get insight into such diversified therapies as movie therapy, sleep therapy, lifestyle therapies, literature therapy, supportive psychotherapy, hospital garden therapy, cognitive behavioral therapies, which is beneficiary for CMUs preparations for future doctoring.

3.4 Clinical experiencing and reflective writing

CMUS are required to go to different hospitals in Shaanxi Province for a week clinical experiencing. After finishing the clinical experiencing CMUS undergraduates, teachers collected their reflective writings. The reflective writings cover professional skills category, professionalism category, patient-doctor empathy category and future doctoring category as seen below. Clinical experiencing fosters their in-depth reflection, develops empathy and improves their patient-centered clinical thinking by reflective writings. These reflective writing matches Six A Principle of NM, namely, acquire enough information to understand the patients' concern, ask a clinically relevant question, access information to answer the clinically relevant question, assess the quality of the information, apply the information to the clinical question and assist the patient to make a decision^[13].

Conclusion

Based on this research results, the government should continuously offer favorable policies and financial incentives to attract and retain rural health workforce and improve the living conditions and social status of rural physicians. Also, medical universities are responsible for offering competency-based curriculum to make CMUs and general practice undergraduate more competent for primary care upon graduation.

The medical colleges should strengthen employment guidance and encourage CMUs to offer medical care in primary healthcare institutions. The findings not only provide reference for occupational guidance in medical colleges, but also are beneficial for the Chinese government to further improve strategies to increase medical students' interest to meet the increasing needs of competent physicians in rural areas of China.

Acknowledgments

Fund project: Shaanxi Provincial Humanities Research Program Titled Narrative Medicine Competency Education for General Practitioners in Shaanxi Province (project no. 19JK0752)

References

- [1] Pengfei Yang, Qianghai Huang, Jianmin Liu. China needs to tackle the decline in medical school applicants[J]. *The Lancet*, 2014, 384(9945):742-743.
- [2] Xinghua Z. The speed of General Practitioner Training raise again. (Chinese). *Guangming Daily*. 2018. http://www.gov.cn/zhengce/2018-01/26/content_5260888.htm. Accessed January 30, 2018.
- [3] General Office of the State Council of the People's Republic of China. Opinions of the General Office of the State Council on Reforming and Improving General Practitioner Training and Incentive Mechanisms. (Chinese). http://www.gov.cn/zhengce/content/2018-01/24/content_5260073.htm. Accessed January 30, 2018.
- [4] He Xingchen, Xue Yingli. The Impact of Urbanization on Medical Students' Employment Intentions towards Primary Health-care Institutions. *Journal of Modern Education Review*. 2017(7) 1:78-83.
- [5] Kawamoto R, Uemoto A, Ninomiya D, et al. Characteristics of Japanese medical students associated with their intention for rural practice. [J]. *Rural & Remote Health*, 2015, 15(2):3112
- Zhu Y G, Ioannidis J P A, Li H, et al. Understanding and Harnessing the Health Effects of Rapid Urbanization in China [J]. *Environmental Science & Technology*, 2011, 45(12):5099-5104.
- [7] Syahmar I, Putera I, Istatik Y, et al. Indonesian medical students' preferences associated with the intention toward rural practice [J]. *Rural and remote health*, 2015, 15(4):3526.
- [8] Buchan J, Couper I D, Tangcharoensathien V, et al. Early implementation of WHO recommendations for the retention of health workers in remote and rural areas[J]. *Bulletin of the World Health Organization*, 2013, 91(11):834-840.
- [9] Xiaoyu W, Lixing L. The Impact of Urbanization on Health in China[J]. *Nankai Economic Studies*, 2014.
- [10] Fetters MD, Chi C, Hu L. Hu, and L. Insights on developing general practice education in China. *Acad Med*. 2017;92(10):1365
- [11] Hall J N, Woods N, Hanson M D. Is social sciences and humanities (SSH) premedical education marginalized in the medical school admission process? A review and contextualization of the literature. [J]. *Academic Medicine Journal of the Association of American Medical Colleges*, 2014, 89(7):1075-86.
- [12] Heath, Iona. How medicine has exploited rationality at the expense of humanity: an essay by Iona Heath[J]. *BMJ*, 2016.

[13]Meza JP, Passerman DS.Integrating Narrative Medicine and Evidence-based Medicine[M]. London: Radcliffe Publishing Ltd, 2011:1.