

Factors influencing medical students and psychiatry residents in  
Ghana to consider psychiatry as a career option - a qualitative study

Vincent I. O. Agyapong et al.

Deposited 2023-09-27

Citation of published version:

Agyapong, V. I. O., Ritchie, A., Doucet, K., Agyapong-Opoku, G., Shalaby, R., Hrabok, M., Ulzen, T., & Osei, A. (2020). Factors influencing medical students and psychiatry residents in Ghana to consider psychiatry as a career option – a qualitative study. In *Global Mental Health* (Vol. 7). Cambridge University Press (CUP). <https://doi.org/10.1017/gmh.2020.24>

©2020

This work is licensed under a Attribution 4.0 International (CC BY 4.0) license.



Other

Brief Report

**Cite this article:** Agyapong VIO, Ritchie A, Doucet K, Agyapong-Opoku G, Shalaby R, Hrabok M, Ulzen T, Osei A (2020). Factors influencing medical students and psychiatry residents in Ghana to consider psychiatry as a career option – a qualitative study. *Global Mental Health* 7, e31, 1–5. <https://doi.org/10.1017/gmh.2020.24>

Received: 5 January 2020

Revised: 19 September 2020

Accepted: 6 October 2020


**Key words:**

Careers; incentives; medical students; psychiatry; stigma; risk

**Author for correspondence:**

Vincent I.O Agyapong,  
E-Mail: [agyapong@ualberta.ca](mailto:agyapong@ualberta.ca)

# Factors influencing medical students and psychiatry residents in Ghana to consider psychiatry as a career option – a qualitative study

Vincent I.O Agyapong<sup>1,2</sup> , Amanda Ritchie<sup>3</sup>, Kacy Doucet<sup>2</sup>, Gerald Agyapong-Opoku<sup>4</sup>, Reham Shalaby<sup>1</sup>, Marianne Hrabok<sup>1,5</sup>, Thaddeus Ulzen<sup>6</sup> and Akwasi Osei<sup>7</sup>

<sup>1</sup>Department of Psychiatry, Faculty of Medicine and Dentistry, University of Alberta, Edmonton, Canada; <sup>2</sup>Alberta Health Services, Edmonton, Canada; <sup>3</sup>St James School of Medicine, Anguilla, Anguilla; <sup>4</sup>Tempo School, Edmonton, Canada; <sup>5</sup>Cumming School of Medicine, University of Calgary, Calgary, Canada; <sup>6</sup>Department of Psychiatry, University of Alabama, Alabama, USA and <sup>7</sup>Ghana Mental Health Authority, Accra, Ghana

## Abstract

**Background.** Currently, Ghana has 14 actively practicing psychiatrists and about 26 psychiatric residents for a population of over 28 million people. Previous research suggests a lack of interest by Ghanaian medical students and medical graduates in considering psychiatry as a career option.

**Objectives.** To examine the perception of medical students and psychiatry residents in Ghana about the barriers which hinder Ghanaian medical graduates from choosing careers in psychiatry and how these barriers could be overcome.

**Methods.** This was a cross-sectional qualitative study with data gathered using focus group discussion. Twenty clinical year medical students were selected through block randomization from the four public medical schools in Ghana and invited to participate in one of two focus group discussions. Also, four psychiatric residents were invited to participate in the focus group discussions.

**Results.** The main barriers identified by participants could be grouped under four main themes, namely: (a) myths and stigma surrounding mental health and patients, (b) negative perceptions of psychiatrists, (c) infrastructure and funding issues, (d) lack of exposure and education. To address the barriers presented, participants discussed potential solutions that could be categorized into five main themes, namely: (a) stigma reduction, (b) educating professionals, (c) addressing deficient infrastructure, (d) risk management, and (e) incentivizing the pursuit of psychiatry among students.

**Conclusion.** Health policy planners and medical training institutions could consider implementing proposed solutions to identify barriers as part of efforts to improve the psychiatrist to patient ratio in Ghana.

## Introduction

As a medical speciality, psychiatry is growing exponentially to maintain pace with the growing crisis of mental illness worldwide (Wu and Duan, 2015). An estimated 350 million are suffering from depression, which is expected by 2030 to overtake ischemic heart disease worldwide as the number one cause of disease burden (Tucci and Moukaddam, 2017). However, even with this particular speciality in high demand, stigma against mental illness and the practice of psychiatry remains (Bhugra *et al.*, 2015). Although residents matching into psychiatry in the United States has increased (Weiner, 2018), the severe shortage continues in low- and middle-income countries (Hailesilassie *et al.*, 2017; Warnke *et al.*, 2018).

In developing countries, it is estimated that less than 1% of health budgets are spent on community mental health care (Aslam *et al.*, 2009). Closely linked with this lack of funding is a lack of interest by medical students to specialize in psychiatry in comparison to the other options available for residency (Aslam *et al.*, 2009). Therefore, it is not surprising that many countries are experiencing a shortage of qualified psychiatrists (Lau *et al.*, 2015). The lack of psychiatrists in low- to middle-income countries such as Ghana has led to the exploration of several initiatives to address this problem. In Ghana, these initiatives include task shifting to maximize the scope of practice for community mental health workers (Agyapong *et al.*, 2015a; Agyapong *et al.*, 2015b; 2015c; Agyapong *et al.*, 2016a; 2016b; Agyapong, Farren, and McAuliffe, 2016a), and innovative recruitment initiatives focused on

© The Author(s), 2020. Published by Cambridge University Press. This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted re-use, distribution, and reproduction in any medium, provided the original work is properly cited.

mental health workers (Agyapong, 2016) and psychiatrists (Agyapong and McLoughlin, 2012; Agyapong *et al.*, 2018).

Given this introduction, the goal of this study is to understand barriers that hinder Ghanaian medical graduates from choosing careers in psychiatry, as examined through the perspectives of medical trainees (i.e. medical students and psychiatry residents). A second goal of the study is to generate solutions to barriers identified by medical trainees, to assist policymakers in achieving improved psychiatrist: patient ratios in Ghana. Specific questions included:

- What are the barriers to choosing a career in psychiatry, from the perspective of medical trainees (i.e. medical students and psychiatry residents)?
- What are the solutions to these identified barriers? What are strategies to encourage Ghanaian medical trainees to pursue a psychiatry specialization?

## Methods

### Study design

This was a qualitative study with data gathered using focus group discussion.

### Study participants and data collection

Twenty clinical year medical students, selected through block randomization from the four public medical schools in Ghana and four psychiatric residents were invited to participate in one of two focus group discussions in Kumasi, Ghana. Both focus groups lasted 3 h, and were moderated by experienced non-physician facilitators. The discussions were recorded and subsequently transcribed verbatim. Focus group questions (online Supplementary Appendix I) explored the barriers to choosing a career in psychiatry from the perspective of the medical trainees. They also explored solutions to identified barriers and strategies to encourage Ghanaian medical trainees to pursue a psychiatry specialization. The medical students and psychiatry residents who participated in the focus group discussions each receive an honorarium to cover the cost of participation, including travel and lodging.

### Data analysis

Participants' answers to the questions above were transcribed and analyzed thematically using NVivo. The thematic analysis was informed by the methods of Braun and Clarke (2006). The analytic process involved semantic, data-driven coding and a cyclical, reflexive revision process – returning to the data during coding and theming to ensure that the transcripts illustrate the analytic claims and vice versa.

First, structural coding was used to generate initial codes in line with the specific research questions. Pattern coding, which allows identification of explanatory or inferential codes, was further applied to the initial codes to identify patterns or emerging themes and subthemes across the dataset. This second cycle coding used the deductive approach of thematic analysis. Specifically, the generation of the initial themes and subthemes was directed by each of the two overall research goals of the study. The candidate themes and subthemes were further reviewed by checking their 'fit' with the collated extracts for each theme and subtheme, as well as with the dataset overall. The final sets of themes and

subthemes relevant to the overall research goals were reported and supported with verbatim quotes.

## Results

The participants were asked about factors hindering the accelerated growth in Ghana's psychiatrist population. The main barriers identified by participants could be grouped into four main themes, namely: (a) myths and stigma surrounding mental health and patients, (b) negative perceptions of psychiatrists, (c) infrastructure and funding issues, and (d) lack of exposure and education.

### Myths and stigma surrounding mental health patients

Participants described the stigma that exists in Ghanaian culture as a barrier to their interest in the field. They expressed that stigma manifests as disgust toward people with mental health concerns, referring to them as 'mad' and describing them as dirty and aggressive.

*'Just look at the mad people on our street, wandering about and in dirty, tattered clothes. So if someone says you deal with mad people, then it means you yourself you are dirty.'* – Medical Student

Furthermore, society holds the view that the root cause of mental health issues is spiritual in nature. This adds to the stigma and presents complications in terms of being able to treat the patient.

*'People subconsciously have it that madness is as a result of some spiritual attack. [...] it's caused by 'juju' or some spiritual force, and that is punishment for some wrong done.'* – Medical Student

### Negative perceptions about psychiatrists

The cultural views of mental illness in Ghana contribute to the negative perceptions of mental health workers. Psychiatry is not taken seriously – it is considered to be a pseudoscience and lacks the prestige of other medical specialities.

*'People usually go into a certain field of study because of the prestige it brings cardiologist, neurologist, urologist. Some prestige comes with those names which same cannot be said for psychiatry.'* – Medical Student

### Infrastructure and funding issues

In addition to issues of stigma, the career itself is highly unattractive due to poor funding and infrastructure.

*'Usually, the structure itself is dilapidated, there is no equipment, even simple beds are lacking, and that is enough to discourage them in addition to the belief and myths they have.'* – Psychiatry Resident

### Lack of exposure and education

Students felt that psychiatry is not often a topic of conversation and therefore, is not considered as a potential career path.

*'Out of sight, out of mind. If you don't hear about it, you won't think about it so it won't be part of your options'* – Medical Student.

To address the barriers presented, participants discussed potential solutions in five main themes, namely: (a) stigma reduction, (b) educating professionals, (c) addressing poor infrastructure, (d) risk management, and (e) incentivizing the pursuit of psychiatry among students.

### Stigma reduction

To reduce stigma in the general population, the participants emphasized the importance of increasing the general literacy level in Ghana as well as the need to address the issue of untreated mentally ill people in the streets.

*'With regards to stigma, I think we would have to tackle it from the root. Pushing for educational reforms. [...] a pupil knowing that mosquito causes malaria, you see it in your test, so like what causes mental illness?' – Medical Student*

### Educating professionals

Participants recognized the importance of educating professionals and religious leaders so they can work toward collaborating with psychiatrists to treat patients.

*'In eradicating the cultural and spiritual aspect of stigma, I think one of the people we should be targeting are our spiritual leaders' – Medical Student*

### Addressing poor infrastructure

Participants recognized that fundraising to address the poor infrastructure for mental health may be a difficult task and so agreed that a better solution might be to integrate psychiatry into existing infrastructure for the time being, and then standalone psychiatric clinics can be a long-term goal.

*'As the infrastructure is not there, raising money might be a herculean task so we should rather look at integrating it into already existing health care systems. Imagine the nearby hospitals having facilities like that. [...] rather than pushing for the government to build more hospitals' – Medical Student*

### Risk management

Risk management must be addressed in order to reduce student's safety concerns.

*'Hospitals and mental health centres should be better equipped to tackle that risk - emergency medication, sedatives should always be available.' – Medical Student*

### Incentivizing the pursuit of psychiatry among students

The last solution that was discussed was incentivizing the pursuit of psychiatry among students. Suggested ways of incentivizing the pursuit of psychiatry among students included increasing students' exposure to the field, improving the student experience and the quality of mental health education, involving diaspora-based psychiatrists as guest lecturers, offering career counselling sessions to medical students and making the job itself more attractive by increasing psychiatrists' salaries:

*'Have a separate more enticing salary structure for mental health workers; it will entice students to specialize in psychiatry.' – Psychiatry Resident*

## Discussion

Our study has identified four main barriers hindering medical trainees from pursuing a specialization in psychiatry: (a) myths and stigma regarding mental health, (b) negative perceptions of psychiatrists, (c) infrastructure and funding issues, and (d) lack of exposure and education. To address the barriers presented, participants discussed potential solutions that could be categorized into five main themes, namely: (a) stigma reduction, (b) educating professionals, (c) addressing poor infrastructure, (d) risk management, and (e) incentivizing the pursuit of psychiatry among students.

### Myths and stigma and risk surrounding mental health patients

Patients with mental health conditions are often vulnerable to rejection, discrimination, and lack of access to health care, housing, and employment (Kishore *et al.*, 2011). These problems are particularly prominent in low and middle-income countries (Cutler *et al.*, 2006; Lau *et al.*, 2015; Stuart, 2016). One of the suggestions to combat the stigma that emerged from our study was mental health literacy for Ghanaians, including the incorporation of education in school. Examples of successful educational campaigns exist, such as the World Psychiatric Association's Global Program, which focused on schizophrenia stigma (Stuart, 2016), as well as Mental Health First Aid (MHFA; Kitchener and Jorm, 2002, Stuart, 2016). To address perception regarding risk when working with mental health patients (Stuart, 2016), it is critical to focus training on how to assess risk and mitigate harm appropriately (Slemon, Jenkins, and Bungay, 2017).

### Negative perceptions of psychiatrists

Our study participants identified a negative perception of psychiatrists as a barrier to entry to the profession (Barney *et al.*, 2006; Angermeyer *et al.*, 2017). It is a common issue for providers to remain pessimistic regarding the likelihood that their patients will recover (Knaak, Mantler, and Szeto, 2017). This leads to an additional barrier, as many practitioners believe that neither their effort nor the effort of their patient will have any effect on the treatment outcome (Knaak, Mantler, and Szeto, 2017).

To address the negative perception of psychiatrists by professional colleagues, our study participants recommend ongoing education, which may be of most utility when delivered via technological means (Clarke, Chambers, and Barry, 2017). Utilization of online resources such as the Hinari Access to Research for Health programme (<https://www.who.int/hinari/en/>) the WHO-sponsored mhGAP program ([https://www.who.int/mental\\_health/mhgap/en/](https://www.who.int/mental_health/mhgap/en/)) and video-based materials (Martin *et al.*, 2020) would allow for widespread dispersion of information and would enable information to spread to more rural areas (Clarke, Chambers, and Barry, 2017).

Religious leaders may also play a key role in furthering mental health education to the general public. Studies have shown that religious leaders are often the first direction people go when faced with illness and inability to cope (Pargament and Lomax 2013), and integrating religion and mental health is associated with good outcomes (Pargament and Lomax 2013) and represents a holistic approach to care for some patients (Lake and Turner, 2017).

### Infrastructure and funding issues

Our study participants identified the poor infrastructure of mental healthcare deliver and chronic underfunding as a major barrier to medical students considering psychiatry careers. Mental health care in Ghana is government-funded; receiving 0.5% of the overall health budget, or about 0.007% of gross domestic product (Saxena *et al.*, 2006; WHO, 2007). This low budget for mental health affects the training, recruitment, and retention of mental health workers (Agyapong *et al.*, 2015a). Spending money on improved mental health care will likely increase the interest of medical students in pursuing psychiatry careers as well as decrease the associated socio-economic costs and the number of years a person spends living with a disability (Lake and Turner, 2017). Consistent with incentives identified by community mental health workers in Ghana (Agyapong *et al.*, 2015a), our study participants identified a number of incentive packages that would encourage medical students to venture into the field of psychiatry. This may, thus, be an important focus of governmental policy.

### Lack of exposure and education

Our study participants also identified lack of adequate exposure to psychiatry during medical school as a significant barrier to medical students considering psychiatry careers. Medical students' perception of psychiatry is heavily influenced throughout their rotations in medical school (Kuhnigk *et al.*, 2007; Kuhnigk *et al.*, 2009). Key predictors of pursuing a residency in psychiatry included: positive role models, appropriate length and depth of exposure to psychiatry, participation in research, which in turn increased understanding of psychiatry (Bhugra *et al.*, 2015; Appleton *et al.*, 2017). Students who received exposure to psychiatry during their undergraduate program were more likely to have a positive perception of psychiatry (Lampe *et al.*, 2010). Thus, medical schools in Ghana could focus on expanding students' exposure to psychiatry.

### Limitations of the study

An important limitation to our study is the generalizability of conclusions, given the relatively small sample size.

### Conclusion and policy implications

This is the first qualitative study in Ghana that explores barriers that hinder Ghanaian medical students from choosing careers in psychiatry. Our study extends the literature regarding innovative recruitment initiatives into psychiatry in Ghana (Agyapong and McLoughlin, 2012; Agyapong *et al.*, 2018) and has important implications for policymakers.

### Consent for publication

The authors received a consent to publish a declaration from each study participant as part of the general consent for the focus group discussions.

**Authors' contributions.** V.A. conceived the study, including drafting the study protocol, supervising data collection and contributed to the drafting of the initial and final manuscripts. A.R. G.A., and M.H. contributed to drafting on the initial and final drafts of the manuscript. K.D. performed a thematic analysis on the transcribed data and contributed to the drafting of the initial

and final versions of the manuscript. All authors approve the final draft of the manuscript.

**Supplementary material.** The supplementary material for this article can be found at <https://doi.org/10.1017/gmh.2020.24>.

**Data.** All transcripts from the focus group workshops are available and can be obtained at a reasonable request from the corresponding author.

**Acknowledgements.** The authors are grateful to the Deputy Director for Community Mental Health and the Communications Manager of the Ghana Mental Health Authority and the Head of the Department of Psychiatry at the Komfo Anokye Teaching Hospital for facilitating the focus group discussions on behalf of the researchers.

**Financial support.** The study was funded by the lead author.

**Conflict of interest.** All authors declare that there are no competing interests.

**Ethical standards.** The study received ethics approval from the Ethics Review Board of the Faculty of Health Sciences, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana.

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. Written informed consent was obtained from all participants to the focus group discussions after they had been verbally informed of the rationale for the study and offered opportunities to ask questions.

### References

- Agyapong V (2016) "Task-shifting within health care systems – a general review of the literature and implications for mental healthcare." *European Psychiatry* 33, S195.
- Agyapong VI, Farren C, and McAuliffe E (2016a) Improving Ghana's mental healthcare through task-shifting- psychiatrists and health policy directors perceptions about the government's commitment and the role of community mental health workers. *Globalization and Health* 12, 57.
- Agyapong VIO, Hrabok M, Agyapong-Opoku G, Khinda H, Owusu-Antwi R, Osei A, Ohene S, Ulzen T, Gilligan P (2018) Evaluating the impact of an innovative public speaking competition to promote psychiatry as a career option for Ghanaian medical students. *Academic Psychiatry* 43(2), 180–183.
- Agyapong VI, and McLoughlin D (2012) Promoting psychiatry as a career option for Ghanaian medical students through a public-speaking competition. *Academic Psychiatry* 36, 229–232.
- Agyapong VI, Osei A, Farren CK, and McAuliffe E (2015a) Factors influencing the career choice and retention of community mental health workers in Ghana. *Human Resources for Health* 13, 56.
- Agyapong VI, Osei A, Farren CK, and McAuliffe E (2015b) Task shifting of mental health care services in Ghana: ease of referral, perception and concerns of stakeholders about quality of care. *International Journal for Quality in Health Care* 27, 377–383.
- Agyapong VI, Osei A, Farren CK, and McAuliffe E (2015c) Task shifting--Ghana's community mental health workers' experiences and perceptions of their roles and scope of practice. *Global Health Action* 8, 28955.
- Agyapong VI, Osei A, McLoughlin DM, and McAuliffe E (2016b) Task shifting-perception of stake holders about adequacy of training and supervision for community mental health workers in Ghana. *Health Policy and Planning* 31, 645–655.
- Angermeyer MC, van der Auwera S, Carta MG, and Schomerus G (2017) Public attitudes towards psychiatry and psychiatric treatment at the beginning of the 21st century: a systematic review and meta-analysis of population surveys. *World Psychiatry* 16, 50–61.
- Appleton A, Singh S, Eady N, and Buszewicz M (2017) Why did you choose psychiatry? A qualitative study of psychiatry trainees investigating the impact of psychiatry teaching at medical school on career choice. *BMC Psychiatry* 17, 276.

- Aslam M, Taj T, Ali A, Badar N, Saeed F, Abbas M, Muzaffar S, and Abid B** (2009) Psychiatry as a career: a survey of factors affecting students' interest in psychiatry as a career. *McGill Journal of Medicine* **12**, 7–12.
- Barney LJ, Griffiths KM, Jorm AF, and Christensen H** (2006) Stigma about depression and its impact on help-seeking intentions. *Australian and New Zealand Journal of Psychiatry* **40**, 51–4.
- Bhugra D, Sartorius N, Fiorillo A, Evans-Lacko S, Ventriglio A, Hermans MH, Vallon P, Dales J, Racetovic G, Samochowiec J, Roca Bennemar M, Becker T, Kurimay T, and Gaebel W** (2015) EPA Guidance on how to improve the image of psychiatry and of the psychiatrist. *European Psychiatry* **30**, 423–30.
- Braun V, and Clarke V** (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology* **3**, 77–101.
- Clarke AM, Chambers D, and Barry MM** (2017) Bridging the digital disconnect: exploring the views of professionals on using technology to promote young people's mental health. *School Psychology International* **38**, 380–397.
- Cutler JL, Alspector SL, Harding KJ, Wright LL, and Graham MJ** (2006) Medical students' perceptions of psychiatry as a career choice. *Academic Psychiatry* **30**, 144–9.
- Darves B** (2017) Physicians shortage spikes demand in several specialties. *New England Journal of Medicine: Career Centre*. <https://www.nejmcareercenter.org/article/physician-shortage-spikes-demand-in-several-specialties/>.
- Hailesilassie H, Kerebih H, Negash A, Girma E, Siebeck M, and Tesfaye M** (2017) Attitude of medical students towards psychiatry: the case of jimma university, Southwest Ethiopia. *Ethiopian Journal of Health Sciences* **27**, 207–214.
- Kishore J, Gupta A, Jiloha RC, and Bantman P** (2011) Myths, beliefs and perceptions about mental disorders and health-seeking behavior in Delhi, India. *Indian Journal of Psychiatry* **53**, 324–329.
- Kitchener BA, and Jorm AF** (2002) Mental health first aid training for the public: evaluation of effects on knowledge, attitudes and helping behavior. *BMC Psychiatry* **2**, 10.
- Knaak S, Mantler E, and Szeto A** (2017) Mental illness-related stigma in healthcare: barriers to access and care and evidence-based solutions. *Healthcare Management Forum* **30**, 111–116.
- Kuhnigk O, Hofmann M, Bothern AM, Haufs C, Bullinger M, and Harendza S** (2009) Influence of educational programs on attitudes of medical students towards psychiatry: effects of psychiatric experience, gender, and personality dimensions. *Medical Teacher* **31**, e303–e310.
- Kuhnigk O, Strebel B, Schilauske J, and Jueptner M** (2007) Attitudes of medical students towards psychiatry : effects of training, courses in psychiatry, psychiatric experience and gender. *Advances in Health Sciences Education: Theory and Practice* **12**, 87–101.
- Lake J, and Turner MS** (2017) Urgent need for improved mental health care and a more collaborative model of care. *The Permanente Journal* **21**, 17–024.
- Lampe L, Coulston C, Walter G, and Malhi G** (2010) Familiarity breeds respect: attitudes of medical students towards psychiatry following a clinical attachment. *Australasian Psychiatry* **18**, 348–53.
- Lau T, Zamani D, Lee EK, Asli KD, Gill J, Brager N, Hawa R, Song WY, Gill E, Fitzpatrick R, Menezes NM, Pham VH, Douglass AB, Allain S, Meterissian GB, Gagnon N, Toeg H, and Murphy C** (2015) Factors affecting recruitment into psychiatry: a Canadian experience. *Academic Psychiatry* **39**, 246–252.
- Martin A, Krause R, Jacobs A, Chilton J, and Amsalem D** (2020) The mental Status exam through video clips of simulated psychiatric patients: an online educational resource. *Academic Psychiatry* **44**, 179–183.
- Saxena S, Sharan P, Garrido M, and Saraceno B** (2006) World health organization's mental health atlas 2005: implications for policy development. *World Psychiatry* **5**, 179–184.
- Slemon A, Jenkins E, Bungay V** (2017) Safety in psychiatric inpatient care: the impact of risk management culture on mental health nursing practice. *Nursing Inquiry* **24**(4), e12199.
- Stuart H** (2016) Reducing the stigma of mental illness. *Glob Ment Health (Camb)* **3**, e17.
- Tucci V, and Moukaddam N** (2017) We are the hollow men: the worldwide epidemic of mental illness, psychiatric and behavioral emergencies, and its impact on patients and providers. *Journal of Emergencies, Trauma, and Shock* **10**, 4–6.
- Warnke I, Gamma A, Buadze M, Schleifer R, Canela C, Strebel B, Tenyi T, Rossler W, Rusch N, and Liebreiz M** (2018) Predicting medical students' current attitudes toward psychiatry, interest in psychiatry, and estimated likelihood of working in psychiatry: a cross-sectional study in four european countries. *Frontiers in Psychiatry* **9**, 49.
- Weiner S** (2018) Addressing the escalating psychiatrist shortage. AAMC. AAMC.
- WHO** (2007) *Ghana Country Summary. Mental Health Improvement for Nations Development (MIND)*. Geneva, Switzerland: World Health Organization: Department of Mental Health and Substance Abuse.
- Wu Y, and Duan Z** (2015) Analysis on evolution and research focus in psychiatry field. *BMC Psychiatry* **15**, 105.