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The African Global Mental Health Institute: Increasing capacity, inclusivity, and translation of psychiatric research and care

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Abstract

The largest treatment gap for mental, neurological and substance use (MNS) disorders to date exists in Sub-Saharan Africa (e.g., South Africa, Malawi, Nigeria). While efforts have been made to reduce the global burden of MNS disorders, there remain significant barriers to delivery of equitable mental health care in Africa and the diaspora. These barriers are deeply rooted in a lack of research structures to inform care delivery, few outlets to train in-country mental health professionals, and limited involvement of policymakers in translation of research findings. Given the demonstrated need across domains of research, education, service delivery and policy in Africa, it is in the purview of global leaders and mental health professionals to build the infrastructure necessary to make systematic, targeted strides to develop each of these areas. With this conceptual framework in mind, over fifty global leaders, psychiatrists, mental health professionals and advocates with expertise in cultural psychiatry convened at a global conference in Cape Town, South Africa in 2016 to establish

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INTRODUCTION

Mental, neurological and substance use (MNS) disorders are one of the leading causes of disabilities worldwide.¹ Recent reports reflect that the global burden of mental illness accounts for 32.4% of years lived -with -disability and 13.0% of disability-adjusted life years ² (i.e., the equivalent of lost years of healthy life).³ Rates of MNS disorders are particularly high in low- and middle-income countries (LMICs), there is also a commensurate treatment gap of 90% which can be attributed to numerous barriers to care.⁴⁻⁵ This is particularly true in Sub-Saharan Africa, where the largest treatment gap for MNS disorders exists.⁶ Persistent barriers to mental health care include low capacity of mental health professionals, preferences for traditional medicine and inadequate infrastructures for service delivery.⁷ Barriers are further compounded by the influence of culture on mental illness, which effects service access and communication due to a series of factors, including perception of symptoms (e.g., symptoms seen as spiritual rather than medical in etiology, or particular religion denies existence of psychiatric symptoms) and the presence of stigma surrounding mental illness which may prevent access to care.⁸⁻¹⁰ Despite these differences, individuals of diverse cultural backgrounds, including those from Sub-Saharan Africa and the diaspora, have long been excluded from psychiatric research that can in turn strengthen assessment and care delivery for MNS disorders. As a result, Western-developed psychiatric assessment tools and treatments may be of limited use in non-Western settings.¹¹ In response to the persistent burden of psychiatric illnesses in Africa and the diaspora, expert psychiatrists, psychologists, public health professionals, mental health advocates and policymakers convened in Cape Town, South Africa in 2016 to discuss contemporary challenges in treating MNS disorders. The meeting was hosted by Boston Medical Center/Boston University School of Medicine (BUSM), the University of KwaZulu-Natal (UKZN), George Washington

University (GWU) and Massachusetts General Hospital (MGH). Collective recognition of numerous barriers to mental health care incited a vision for an institute that prioritizes neuropsychiatric training, clinical care, policy, and research on a global scale. In this vein, and working under the axioms of the late Dr. Chester M. Pierce of MGH, a global psychiatry visionary, the African Global Mental Health Institute (AGMHI) was established. Aligned with the World Bank and the WHO Mental Health Action Plan,¹² the AGMHI aims to strategically enhance mental health care equity in Sub-Saharan Africa (e.g., South Africa, Malawi, Nigeria) across four domains: research, education and training, clinical care delivery, and policy. Within these domains lie multi-sector strategies to: implement training and education programs for in-country clinicians and researchers; conduct, disseminate, and scale-up culturally-relevant research and evidence-based practices; share methods of improving service access; identify key stakeholders; and foster global collaborations to inform policy. The AGMHI also represents a unique opportunity to uncover cultural nuances (e.g., religious beliefs, attitudes toward mental health access, effect of stigma and gender) and their influence on mental health care—a topic yet to be fully explored. The AGMHI strives toward continuous access to inclusive, culturally-conscious mental health care across Africa and the diaspora. This paper reviews prominent barriers to equitable mental health care in the areas of research, education and training, clinical care delivery, and policy and presents the AGMHI's targeted strategies to lessen the treatment gap for MNS disorders in Sub-Saharan Africa.

METHODS

Barriers to mental health care access & proposed solutions

Research

Within Africa and the diaspora, two key barriers to the production of mental health research are: the limited representation of African descent populations in quantitative research, specifically epidemiological, clinical trial, genetic and ethnopsychopharmacologic (e.g., how ethnic factors influence metabolism of psychotropic medicine) studies,¹³ and; a lack of contextual qualitative data. Despite the critical value of research to enhance our global understanding of psychiatric conditions, these informative research methods are seldom performed in Africa, based on funding,

de-prioritization by governing entities, and other factors explained later. For example, though the population of Africa constitutes 13.5% of the global population, they represent a mere 3% of all genetic research,¹⁴ with an even smaller proportion devoted specifically to mental health. In comparison, the population of Europe occupies a similar rate (12.9%) of the global population,¹⁵ yet, disproportionately represents 81% of all genetic research to date.¹⁴ This disproportionate and homogenous data collection has important health implications. The lack of evidence relevant to diverse biologic dispositions not only excludes people of African descent from evolving medical treatments, but also leads to inappropriate psychiatric diagnoses and increased likelihood of adverse events. For example, a breadth of ethnopsychopharmacologic research has revealed genetic differences among people of African descent that influence metabolism and subsequent effectiveness of certain medications, which may perpetuate adverse effects.¹⁶⁻¹⁸

It is equally prudent to recognize the value of qualitative research to fully understand all elements of MNS disorders. As evidenced by Pelzang and Hutchinson,¹⁹ qualitative research methods must elicit cultural and social factors to inform study design and data interpretation in diverse settings. A lack of cross-cultural research practice threatens data integrity through over- or underestimation of findings, or introducing bias. Despite the documented utility of qualitative research methods in strengthening and contextualizing research findings, and its application to discerning complex mental health problems,²⁰ there remains a dearth of qualitative research performed across the continent of Africa due to a number of factors described later in this article, including limited funding and a lack of expertise in qualitative research methodologies.²¹⁻²² The call for qualitative research remains potent among other types of research in the African community, and ensures that advancements in mental health research will benefit individuals and communities in Africa and the diaspora.

To address large gaps in quantitative and qualitative research, the AGMHI proposes a scale-up of multiple regional Research Centers of Excellence in areas where they do not currently exist. Research Centers of Excellence have been established as optimal and effective for increasing research production in the literature,²³⁻²⁴ notably for their ability to form linkages between government, academia, and industry and reduce the time gap between discovery of novel findings and their translation. Thus, establishing Research Centers of Excellence will allow for African countries to secure funding for multifaceted programs, form clinical trial networks, develop robust databases, establish biobanks, foster career development, and gain access to resources provided by agencies such as the National Institute of Health.²⁵ To this end, the inherent multidisciplinary and collaborative nature of Research Centers of Excellence strongly aligns with the goals of the AGMHI and meets the urgent need for a culturally -relevant evidence base to begin to understand the mental health landscape in Africa and the diaspora. To date, there have been promising initiatives to spark research production and educational opportunities,²⁵ though more is to be done. Currently, related efforts include the “Africa Centers of Excellence” project,²⁶ which includes elements of research conduction as part of its intention to promote regional development, forge partnerships with private sectors, and enhance education in West and Central Africa. Specific to Sub-Saharan Africa, an International Center of Excellence for Malaria Research²⁷ has been instituted by the National Institute of Allergy and Infectious Diseases, promoting public health research on malaria in Ethiopia and Kenya, and shows budding success. These examples represent preliminarily successful efforts for scaling up necessary research and education across Africa, and demonstrate potential feasibility in establishing a Research Center of Excellence related to psychiatric research in Sub-Saharan Africa. Thus, establishing multiple regional Research Centers of Excellence in areas where they do not exist will lend itself to enhancing support from government and industry to grow research and educational opportunities that focus on psychiatric care.

Education & Training to enhance capacity and care delivery

Key barriers in the domains of education and training are largely related to limited capacity of trained, in-country mental health professionals to deliver clinical care and execute related research activities, as well as insufficient funding due to the low priority of mental health in overall health budgets.²⁸⁻²⁹ For example, countries such as Chad and Eritrea have one psychiatrist for a population of 4 and 9 million, respectively.²⁸ Currently, there are several constraints to scaling up education and training in psychiatry. Reports demonstrate only 7.5% of all medical schools globally are located in Sub-Saharan Africa and the few existing schools are disproportionately located in and primarily serve urban areas compared to rural regions.²⁸ The widely-cited phenomenon of “brain drain,” or emigration of physicians to high-income countries (HICs),²⁸ further stresses the need for psychiatric and medical scholarship in Africa to avoid depleting medical support from the continent.

Complementary to brain-drain is the phenomenon of physician burnout and its malign effects on provision of primary and mental health care.²⁹ A recent systematic review of provider burnout reveals a high rate in a number of LMICs, with estimated shortages of practicing doctors, nurses, and midwives reaching as high as 815,000.²⁸ This suggests that African health care policymakers face significant challenges to support research on burnout risk factors and on evidence-based approaches that can modulate stress, build resilience and reduce provider burnout.²⁹ Without taking significant measures to temper burnout, in-country brain-drain may worsen the treatment gap.

According to a study completed by leaders in global psychiatry and members of the AGMHI, Fricchione and colleagues (2012) report that one promising solution to training and increasing capacity of mental health professionals lies in forming bidirectional or “twinning” relationships (i.e., established partnerships between institutions aiming to achieve shared goals through shared ideas, labor, and risk) between academic medical centers both within and outside of Sub-Saharan Africa.³⁰ Their reasoning is twofold: 1) to integrate cultural diversity into curricula developed in HICs; and 2) to train physicians and early career professionals from LMICs in-country. In alignment with this framework, the AGMHI aims to bolster the education and training of in-house clinicians and researchers by leveraging HIC and LMIC collaborations, and especially African-based collaborations with medical schools and creating rigorous training opportunities for mental health professionals (e.g., psychiatrists, psychologists, social workers, nurses, etc.). Additionally, to increase accessibility to trainings, the AGMHI plans to employ telepsychiatry (virtual mental health care sessions) a widely used modality with demonstrated success in Sub-Saharan Africa³¹ for training and care delivery in low-resource settings. By convening educators and mental health experts across Africa, the AGMHI aims to design models for psychiatric education that may be adapted, translated and disseminated globally. In this vein, the AGMHI hopes this may provide directions for lessening the “brain-drain” phenomenon.

In order to improve clinical services, the AGMHI will place special emphasis on the instruction of systematic reviews, meta-analysis, and implementation research methods in order to assist mental health professionals in tracking the outcomes and efficacy of novel interventions, as well as the conditions of study settings. Implementation research is inherently evaluative as it incorporates performance measures that promote fidelity and effective application of research findings to practice. For this reason, the AGMHI intends to harness clinical research findings for the development and dissemination of efficacious protocols as a strategy for healthcare systems to optimize mental health care delivery.

Policy

Though empirical evidence is critical to inform mental health policies, a host of barriers impede the timely translation of research. Reviews demonstrate a gap of 17 years between discovery of novel interventions and implementation into clinical practice, citing lags in timely publication of findings (due to publication biases, measurement and reporting issues, etc.) as a key barrier.³² Furthermore, evidence collected through clinical trials often fails to account for the cost-effectiveness of interventions and implications for long-term sustainability.³³⁻³⁴ Specific to Sub-Saharan Africa, gaps in translational research are further contextualized by a lack of policies targeting mental health and substance use; or, in countries where promising strategic plans exist, a deficiency in necessary resources (e.g., staff, monitoring systems, etc.), preclude implementation.³⁵

In recognition of this disconnect, the AGMHI intends to adopt research strategies that underscore a project’s social return on investment to demonstrate the cost-effectiveness of prospective mental health services and further harness buy-in of local and national policymakers. By partnering with local governments and administrators, the AGMHI will engage political stakeholders in all aspects of its research, education, and clinical efforts to promote sustainable mental health care. Specifically, this entails eliciting feedback from national and local policymakers on research questions from their inception. Fostering these vital relationships may also cultivate buy-in to provide the necessary resources to implement policies. More recently, leaders of the AGMHI met with officials of the Ministries of Health and Education in Liberia. Outcomes of this meeting included the emergence of a twinning partnership, where Liberian government officials offered their support in the launch of Liberia’s first psychiatry residency training program (with guidance from academic medical centers in the Northeast United States). This meeting was two-fold, as it also entailed discussions on how to effectively implement research-informed school-based interventions to reduce the burden of substance use as it relates to mental health among Liberian youth. This partnership is an important

example of the effectiveness of twinning partnerships as well as the translation of locally-conducted research findings into implementable interventions to address youth substance use in Liberia.

CONCLUSION

This paper outlines a number of solutions proposed by the AGMHI in response to existing barriers across mental health research, education, clinical care delivery and policy development in Sub-Saharan Africa. These four pillars are interconnected and support one another in their collective aim of improving care for MNS disorders for those who are most vulnerable yet underserved in Africa and the diaspora. As such, the goals of the AGMHI are to:

- 1) Establish regional Research Centers of Excellence that conduct culturally-informed quantitative and qualitative research studies;
- 2) Develop training and education models that utilize reciprocal, twinning partnerships between academic and medical centers internationally (African-based partnerships such as that of the Liberia College of Physicians and Surgeons (LCPS) and the University of KwaZulu-Natal (UKZN) in Durban, South Africa, who are collaborating in the launch of the first psychiatry residency training program in Liberia), that: a) increase the number of available mental health providers and researchers in-country; and b) are translated and disseminated widely to enhance uptake; and
- 3) Use cost-effectiveness strategies and bidirectional communication to enlist support from policymakers at the local, regional, and international levels.

In summary, the AGMHI's mission is to address the contemporary challenges of mental health disorders and their comorbid conditions across Africa and the diaspora. The AGMHI is gaining increasing support by informing relevant public entities (e.g., government offices including Ministries of Health and Education) and private entities (e.g., U.S. and Africa-based universities and hospitals, foundations, nonprofit organizations) of its establishment, mission and goals. Further, the AGMHI has established a media presence, publishing all conference videos and content online through a web page that has garnered significant membership interest globally (<http://agmhi.weebly.com/>).

Additionally, preparations are underway for the third AGMHI conference, occurring in Cape Town, South Africa in September 2019 as a follow-up to the 2016 meeting. Key AGMHI leaders will review progress made on the institute's establishment and proposed goals and determine next steps toward reaching the long-term goals across the four pillars. In practice, etching progress across the AGMHI's comprehensive goals requires domain-specific expertise to guide its direction and drive success. This underscores the importance of collaborations between the U.S. and African countries in order to effectively co-lead each pillar.

With the strategies outlined by the AGMHI, a bridge to accelerate clinical and research capacity is presented to ameliorate the mental health treatment gap experienced in Africa and the diaspora. By establishing a formal institute with a sustainable infrastructure, clinicians and researchers from Africa and the diaspora are offered the agency and opportunity to make strides toward equitable, evidence-based, and culturally-conscious mental health care access.

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REFERENCES MAKE SURE ARE SUPERSCRIP FOR IN-TEXT

1. Whiteford HA, Degenhardt L, Rehm J, Baxter AJ, Ferrari AJ, & Erksine HE. (2013). Global burden of disease attributable to mental and substance use disorders: findings from the global burden of disease study 2010. *The Lancet*,382:1575.
2. Vigo D, Thornicroft G, & Atun R. (2016). Estimating the true global burden of mental illness. *The Lancet Psychiatry*,3:171-178.
3. World Health Organization. (2019). Metrics: Disability-Adjusted Life Year (DALY). https://www.who.int/healthinfo/global_burden_disease/metrics_daly/en/.
4. Patel V, Maj M, Flisher AJ, De Silva MJ, Koschorke M, & Prince M. WPA Zonal and Member Society Representatives. (2010). Reducing the treatment gap for mental disorders: WPA survey. *World Psychiatry*,9(3):169-76.

5. Stein DJ, Seedat S, Herman A, Moomal H, Heeringa SG, Kessler RC, & Williams DR. (2018). Lifetime prevalence of psychiatric disorders in South Africa. *British Journal of Psychiatry*, 192:112-117.
6. Lund C, Alem A, Schneider M, Hanlon C, Ahrens J, Bandawe C, Bass J..... Susser E. (2015). Generating evidence to narrow the treatment gap for mental disorders in Sub-Saharan Africa: rationale, overview and methods of AFFIRM. *Epidemiology and Psychiatric Sciences*,24:233-240.
7. Bruwer B. (2011). Barriers to Mental Health Care and Predictors of Treatment Dropout in the South African Stress and Health Study. *Psychiatric Services*, 62:774.
8. Caplan S. (2019). Intersection of Cultural and Religious Beliefs About Mental Health: Latinos in the Faith-Based Setting. *Hispanic Health Care International*,17(1):4-10.
9. Loewenthal KM, & Cinnirella M. (1999). Beliefs about the Efficacy of Religious, Medical and Psychotherapeutic Interventions for Depression and Schizophrenia among Women from Different Cultural–Religious Groups in Great Britain. *Transcultural Psychiatry*, 36(4):491-504.
10. Alem A, Jacobsson L, & Hanlon C. (2008). Community-based mental health care in Africa: mental health workers' views. *World Psychiatry*; 54-57.
11. Alarcón R. (2009). Culture, cultural factors and psychiatric diagnosis: review and projections. *World Psychiatry*,8(3):131–139.
12. World Health Organization. (2013). Mental health action plan 2013-2020. World Health Organization. <http://www.who.int/iris/handle/10665/89966>.
13. Kirmayer IJ, & Ban L. (2013). Cultural Psychiatry: Research Strategies and Future Directions. *Advanced Psychosomatic Medicine*, 33:97-114.
14. Popejoy AB & Fullerton SM. (2016). Genomics is failing on diversity. *Nature*,538.
15. United States Census Bureau. (2004). Global Population Profile 2002. <https://www.census.gov/prod/2004pubs/wp-02.pdf>.
16. Henderson DC. (2010). Pharmacotherapy in African Americans. In: Hampton RL, Gullotta, TP, Crowel RL. (ed.) *The Handbook of African American Health*. New York, NY: The Guilford Press.
17. Kudzi W, Adjei GO, Ofori-Adjei D, & Dodoo ANO. (2011). Pharmacogenetics in Ghana: Reviewing the Evidence. *Ghana Medical Journal*,45(2): 73–80.
18. Kudzi W, Dodoo AN, & Mills JJ. (2009). Characterisation of CYP2C8, CYP2C9 and CYP2C19 polymorphisms in a Ghanaian population. *BMC Medical Genetics*,10:124. doi: 10.1186/1471-2350-10-124.
19. Pelzang R, & Hutchinson AM. (2018). Establishing Cultural Integrity in Qualitative Research. *International Journal of Qualitative Methods*,17:1-9.
20. Al-Busaidi, ZQ. (2008). Research and its Uses in Health Care. *Sultan Qaboos University Medical Journal*, 8(1):11–19.
21. Kumwenda S, Niang EHA, Orondo PW, William P, Oyinlola L, Bongo GN, & Chiwona B. (2017). Challenges facing young African scientists in their research careers: A qualitative exploratory study. *Malawi Medical Journal*,29(1):1–4.
22. Schneider M, Sorsdahl K, Mayston R, Ahrens J, Chibanda D, Fekadu A, Hanlon A, Holzer S, Musisi S, Ofori-Atta A, Thornicroft G, Prince M, Alem A, Susser E, & Lund C. (2016). Developing mental health research in sub-Saharan Africa: capacity building in the AFFIRM project. *Global Mental Health (Camb)*,3: e33.
23. Ahn S. (1999). A new program in cooperative research between academia and industry in Korea, involving Centers of Excellence. *Technovation*,15:241-257.
24. Frost TS, Birkinshaw JM, & Ensign PC. (2002). Centers of excellence in multinational corporations. *Strategic Management Journal*,23:997-1018.
25. Institute of Medicine. (2004). NIH Extramural Center Programs Criteria for Initiation and Evaluation. *NIH Extramural Center Programs*. Washington D.C. National Academies Press (US).
26. Association of African Universities: “Africa Centers of Excellence Project.” Accessed May 1, 2019. <https://www.aau.org/programmes-and-services/current-projects/africa-centers-of-excellence-project/>.
27. National Institute of Allergy and Infectious Diseases. “Sub-Saharan Africa International Center of Excellence for Malaria Research.” June, 2017. Accessed May 2, 2019. <https://www.niaid.nih.gov/research/sub-saharan-africa-icemr>.
28. Kasper J & Bajunirwe F. (2012). Brain drain in sub-Saharan Africa: contributing factors, potential remedies and the role of academic medical centres. *Archives of Disease in Childhood*, 97:973-979.
29. Dugani S, Hirschhorn LR, Ratcliffe H, Veillard J, Martin G, Lagomarsino G, Basu L, & Bitton A.(2018). Prevalence and factors associated with burnout among frontline primary health care providers in low- and middle-income countries: A systematic review. *Gates Open Research*; 2:4.
30. Fricchione GL, Borba CPC, Alem A, Shibre T, Carney JR & Henderson DC. (2012). Capacity Building in Global Mental Health: Professional Training. *Harvard Review of Psychiatry*,20:47-57.
31. Wamala DS & Augustine K. (2013). A meta-analysis of telemedicine success in Africa. *Journal of Pathology Informatics*,4:6.
32. Morris ZS, Wooding S, & Grant J. (2011) The answer is 17 years, what is the question: understanding time lags in translational research. *Journal of the Royal Society of Medicine*, 104:510-520.
33. Furber G, Segal L, Leach M, Turnbull C, Procter N, Diamond M..... McGorry P. (2015). Preventing mental illness: closing the evidence-practice gap through workforce and services planning. *BMC Health Services Research*,15.
34. Levin C & Chisholm D. (2016). Cost-Effectiveness and Affordability of Interventions, Policies, and Platforms for the Prevention and Treatment of Mental, Neurological, and Substance Use Disorders. *Mental, Neurological, and Substance Use Disorders: Disease Control Priorities, Third Edition (Volume 4)*. Washington, D.C.
35. Lund C, Stein DJ, Flisher AJ, & Mehtar SL. (2007). Editorial: Challenges faced by South African health services in implementing the Mental Health Care Act. *South African Medical Journal*, 97:352.