# Mental health research in the Arab region: challenges and call for action

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**Although mental disorders are a leading cause of disability in the Arab region, which includes 5·54% of the global population, Arab countries produce only 1·0% of the global output of peer-reviewed publications in mental health research. Various stakeholders, including Arab mental health researchers, institutional and funding agency officials, and international research collaborators, convened to identify challenges faced by Arab mental health researchers and propose an evidence-informed call for action. Challenges identified include prevalent stigma and low awareness, conflict and war, scarce institutional and funding resources, inadequate publishing opportunities, insufficient training in mental health research, and shortage of reliable and valid assessment tools. The proposed action plan includes ways of addressing stigma and spreading awareness, increasing collaborative efforts, building research infrastructure, strengthening the mental health workforce, and translating research findings into a call to action on societal and governmental levels. The proposed action plan could provide a roadmap for Arab mental health researchers and research institutions, which might ultimately increase research productivity in the Arab region and close the gap between Arab countries and the rest of the world.**

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## Introduction

Mental health disorders are a major public health concern, globally and within the Arab region.[1–4] The burden of mental health disorders, as measured by disability-adjusted life years (DALYs), is higher for almost all Arab countries than the global level.[5,6]

The Arab region, including the 22 members of the Arab League (Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, United Arab Emirates, and Yemen), has a population of 425 million people and one of the largest proportions of young people in the world with about 60% of Arabs aged less than 25 years. Although the Arab region constitutes 5·54% of the global population and faces a higher burden of mental disorders than that of the global population, it produces only 1·0% of the world output of peer-reviewed journal articles in mental health in all languages and only 11 articles per million individuals, compared with a global average of 61 articles per million individuals (unpublished work). Nonetheless, research productivity has increased over the past 10 years by 160% in the Arab region compared with 57% globally.

We searched Scopus and Web of Science databases for all articles in any journal or discipline that included in their titles any keyword related to mental disorders or mental health Medical Subject Headings (see search strategy and selection criteria panel).

Extrapolating findings from international mental health research is useful for building a locally relevant empirical basis for clinical practice; however, it is not sufficient. Local research is essential to ensure an optimal and contextualised model of delivery of mental health care.[7] Moreover, local research captures important cultural differences in describing and defining typical versus abnormal behaviours, thoughts, and feelings. Thus, locally reliable, valid, and culturally appropriate assessment tools urgently need to be developed. Lastly, regional research is important because priorities might differ across contexts given the variation not just in the prevalence and burden of diseases, but also in capacities of health systems. It is unfortunate that investigators and populations from the Arab region remain substantially underrepresented in mental health research.[8]

In an effort to make an evidence-based call for action, various stakeholders, including mental health researchers, institutional and funding agency officials, and international research collaborators, convened during the 49th Middle East Medical Assembly held at the American University of Beirut (Beirut, Lebanon) in April, 2018, to discuss the status of mental health research in the Arab region and the challenges to its enhancement, and subsequently propose an action plan.

## Challenges identified

### Prevalent stigma and decreased awareness

Cultural beliefs about mental illness and stigma are strong predictors of an individual's attitude towards seeking formal treatment for mental illness.[9] Individuals in the Arab region are more likely to seek informal resources (eg, a religious consultant, close friend, or family member) than formal resources for their mental health problems to avoid confronting the stigma of seeking professional psychiatric help.[10] Interestingly, low perceived need for treatment has been shown to be a greater barrier to seeking treatment than has stigma.[11] In addition, self-disclosure to strangers, a key component of participating in mental health research, might not be culturally or societally acceptable in particular contexts (eg, in the context of the Arab culture).[12]

We believe that stigma, reluctance to self-disclose, and low use of formal services are major barriers to recruiting participants into studies of mental health. Similarly, we



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***Panel 1:*** **Mental health journals in the Arab world (database coverage)**

- *Arab Journal of Psychiatry* (Arab World Research Source, PsycINFO)
- *Egyptian Journal of Psychiatry* (Arab World Research Source, ProQuest Central)
- *Middle East Current Psychiatry* (Scopus)
- *Psychiatry and Neurosurgery* (none)
- *Le Lien Psy* (none)
- *Egyptian Journal of Neurology, Psychiatry and Neurosurgery* (Arab World Research Source, PubMed, Scopus)
- *Eastern Mediterranean Health Journal* (CINAHL, PubMed, Scopus, Web of Science)
- *Saudi Psychiatric Journal* (none)
- *Sudanese Psychiatric Journal* (none)

sense a reluctance of professional, public, and regional funding bodies to engage with mental health research, probably because it is stigmatising and is perceived as less urgent than other health conditions.

## Conflict and war

Most countries in the Arab region have faced economic and political unrest and uncertainty over the past couple of decades,[13] and some have experienced war and armed conflict. This turmoil shifts the focus of the research agenda to humanitarian crises (eg, refugees) and creates an additional challenge for Arab researchers to respond to immediate needs of the community.

## Scarce resources

Mandil and colleagues,[14] in an institutional mapping study, found small amount of national, regional, and international funding awarded to institutions doing health research in the eastern Mediterranean region. Arab countries have the lowest Gross Expenditure on Research and Development compared with their Gross Domestic Product.[15]

The funding allocation had started to improve over the past two decades. Research funds with competitive application processes were established in high-income Arab countries (eg, Qatar and United Arab Emirates) and middle-income Arab countries (eg, Egypt, Lebanon, anmd Morocco). These countries promoted collaboration with external, experienced research centres to increase capacity of local research. For example, Qatar National Research Fund offers various grants, an undergraduate fund, a post-doctorate fund, a national priorities research programme fund, and a cluster fund for which collaboration among different services is required. The total amount funded per study can be up to US$5 million over a 5-year period, depending on the type of grant applied for. Another example is Morocco's Centre National pour la Recherche Scientifique et Technique (CNRST), which now offers up to $1·2 million for research consortiums involving collaborative work.[16] Unfortunately, budget cuts in the past few years have caused changes to the funding systems, whereby co-funding became a preferred option (eg, Qatar National Research Fund). Consequently, intramural research funds, as well as funding from private sources, remain low in the Arab region.

Research priorities are often guided by national priorities, and, unfortunately, mental health is often not considered as such. To secure funding, mental health researchers often collaborate with researchers working on national areas of priority, such as diabetes and cancer. Although this collaboration might shift the focus away from primary psychiatric disorders and severe mental illnesses, it provides an opportunity to enhance the understanding of and demand for mental health research among researchers and clinicians from other disciplines. Furthermore, the propensity to fund researchers with a potential for international publications could jeopardise supporting researchers working on projects of local importance that tend to be published locally, or regionally at best.

Although most international funding agencies encourage regional collaboration, such regional collaboration comes with its own set of challenges. Many countries and institutions in the Arab region do not have the required Institutional Review Boards, research offices, or budget management personnel required by the funding agency to ensure proper management of research funds. In addition, many mental health experts in the region do not have the necessary administrative or research support to meet the stringent requirements of international funders.

## Insufficient publishing opportunities

Mental health research of regional or local relevance typically does not have high chances of publication in high-tier international journals. Only a few scientific journals specialised in mental health exist in the Arab region, with new journals being launched over the past few years (panel 1). These journals face many problems including few article submissions, finding peer reviewers, paucity of electronic versions and websites, and low presence in key indices (eg, only three of the journals in panel 1 are covered in international databases such as PubMed, Scopus, and Web of Science). Administration of these journals should be improved to increase the availability and discoverability of published papers online and, consequently, the chances of citation.

## Insufficient training

In the Arab region, training for mental health research is obtained through four pathways: inclusion within the curriculum of clinical training for mental health-care professionals; additional training offered to clinicians pursuing academic careers; independent research training in regional public health institutions and



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graduate schools; and training abroad in international schools.

Traditional medical education and clinical training in mental health provide basic knowledge in critical literature review and research methodology. This knowledge, with insufficient access to mentorship,[17] is insufficient to create mental health research of high quality. Although some universities require a doctoral thesis for completion of psychiatry residency, such research endeavours are often time-restricted and unfunded. This approach does not support addressing innovative questions, collecting high-quality data, and doing long-term follow-up studies or randomised clinical trials.

Some academic institutions in the Arab region offer extensive training in epidemiology, biostatistics, and research methodology tailored for clinicians, which considers their busy clinical schedules. Despite some highly qualified and accomplished mentors and faculty members who teach these programmes, participant numbers remain low across the region. The path to translating this research training into a lifelong, active research career is not well defined and is challenged by inadequate funding and insufficient mentorship. Lastly, losing the already scarce mental health providers[18] to full-time research careers in the face of growing mental health needs in the region[19,20] contradicts long-term strategic planning.

Individuals who choose to pursue research training in international schools often emigrate to the west. Once challenged by insufficient resources locally, these individuals seek satisfactory research careers elsewhere. This emigration adds to the existing brain drain to the west,[21] which increases as political turmoil continues in the Arab region.

Mental health research in the Arab region is mainly done by clinicians with self-taught research methodology. Unfortunately, clinicians are often unaware of the many limitations of research methods[22] and, therefore, overstate research results or do not take the necessary qualitative or quantitative steps to minimise these limitations. This approach compromises the quality of research output and, thus, international recognition. In addition, growing pressure on clinical faculty members to provide mental health care services is a major barrier to pursuing research training or doing research projects.

### Shortage of reliable and valid assessment tools

Research on mental health, particularly clinical research, requires use of Arabic-validated and culturally appropriate scales and measurement tools with adequate psychometric properties. Although many scales and tests have been translated and validated in Arabic and are being used by various researchers and clinicians, many others, particularly newly developed scales and tests, still need to undergo this process. Establishing validity for a particular population requires multiple studies and triangulation of methods. This validation is particularly important because of the various Arabic dialects and population diversity within and among Arab countries. Newly developed tests in Arabic often do not show evidence of statistical equivalence with the original versions, making cross-national comparisons difficult (unpublished work). Developing appropriate tests is a meticulous process that requires expertise, not only in the subject matter (ie, mental health), but also in cross-cultural psychology, psychometrics, and language. Therefore, collaboration across disciplines is strongly encouraged.

***Panel 2:*** **Proposed action plan**

**Spread awareness and address stigma**
- Educate patients and their families about mental illness
- Raise awareness among the public, especially young people (eg, via school and university-based platforms)
- Use social media
- Engage religious leaders

**Increase collaborative research of mental health**
- Increase regional collaborations (ie, Arab Regional Center for Research and Training)
- Increase multidisciplinary collaborations, particularly during development of Arabic instruments (eg, subject-matter experts, psychometrists, cross-cultural psychologists, and linguists)
- Increase funding support for international collaborations (eg, Fogarty International Center, Academy of Medical Sciences, Harvard Medical School Center for Global Health Delivery—Dubai, and the Wellcome Trust)

**Strengthen infrastructure of regional research**
- Establish Institutional Review Boards
- Develop and found entities to support core research functions (eg, clinical research institutes)
- Invest in independent academic institutions in the region (eg, schools of public health)

**Strengthen the mental health workforce**
- Ensure that medical students have adequate exposure to psychiatry and introduce postgraduate training programmes in psychiatry and clinical psychology

**Translate research findings into action on societal and governmental levels**
- Engage stakeholders in prioritising, doing, and translating research
- Communicate findings to governmental advisors and officials, including policymakers beyond the health sector
- Disseminate findings to the public (eg, through conventional and social media platforms)
- Share findings with mental health professionals as well as other health-care professionals (eg, at local conferences) who would help with advocacy efforts


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## Proposed action plan to improve mental health research in the Arab region

We propose an action plan to increase productivity of mental health research and address the many challenges faced in the Arab region. The plan consists of addressing stigma associated with mental illness, increasing opportunities for collaborative research, improving research infrastructure, strengthening the mental health workforce, and translating research findings into action on societal and governmental levels (panel 2).

### Spreading awareness and addressing stigma

Strategies to reduce stigma should include interventions that target the public, individuals diagnosed with mental illness (to reduce self-stigma), school and college students, and health-care professionals.[23] Sewilam and colleagues[10] proposed a roadmap towards a cultural change to spread awareness and reduce stigma about mental illness in the Middle East. They proposed four approaches: educating families about the illness to provide improved support for patients, engaging social healers and religious leaders, educating young people in schools, and making use of social media.

### Increasing collaborative research

Collaborative research benefits individual researchers and advances understanding and management of the health research process. Successful collaborative networks have increased research productivity of individual researchers, led to development of sophisticated research programmes, helped in mentoring junior researchers, and achieved results that would be difficult for an investigator to accomplish effectively alone.[24] Collaborative research efforts might improve methodology, improve organisation of the research plan, and eventually strengthen the science that is likely to be published and affect clinical practice.

Arab mental health researchers are called upon to build regional and international collaborations. These could be facilitated through online platforms (eg, mailing lists or webinars) and networking sessions during regional and international conferences. Such collaborations would provide institutional and professional expertise required to enhance research productivity and quality. In addition, collaborations can position research teams competitively for extramural funding by expanding the pool of prospective funding agencies. This expansion can be achieved through multiple eligibilities for funding mechanisms within the aggregate research team and by tapping into funding resources with a vested interest in cross-institutional collaboration and global mental health. Data retrieved from Scopus and analysed in January 2019 show that collaboration in mental health research between the Arab region and the rest of the world increased by 72% from 2009 to 2018, and papers with international collaboration are 3·8 times more likely to be cited than papers without collaboration (unpublished work).

As an example of regional collaboration, the Arab Regional Center for Research and Training in mental health was established at the American University of Beirut, Faculty of Medicine, Department of Psychiatry, to contribute to data collection and representation from the Arab region for the revision by WHO of ICD-10 to ICD-11.[25] Investigators from Bahrain, Egypt, Lebanon, and Tunisia participated in clinical data collection. Researchers from other Arab countries either had difficulty getting permission from their ministries to collect data or were unable to engage clinicians from their countries to participate. However, the research team recruited professionals from the eastern Mediterranean region, through their professional associations and through conferences and personal networks in the region, to participate in the internet-based case studies for the revision of the ICD. This collaboration shows Arab mental health professionals are interested in research as long as its implementation is feasible (ie, online), no restrictions exist from governments or stakeholders, and minimal funding is required. This successful experience led to several publications involving colleagues regionally and internationally.[26–28]

International collaborations can enrich outputs of scientific work and expand opportunities of potential funding that are crucial to sustaining local research culture.[24] As mental health research in the Arab region diversifies, integration of multidisciplinary expertise will promote design and execution of research studies that can respond to complex questions about aetiology, risk, presentations, help-seeking behaviours, therapeutics, prevention and promotion interventions, and delivery of care. Multi-disciplinary and cross-institutional collaborations create opportunities and a platform for bidirectional research capacity building, which in turn might help to develop institutional and professional expertise needed to enhance research productivity.[29] In such international collaborations between high-income and low-income or middle-income countries, collaborators from the high-income country are more involved in finalising the research design and methodology of the project, whereas collaborators from the host or low-income or middle-income country are more involved in identifying pertinent research questions, clarifying influence of local cultures, and handling practical issues in feasibility and implementation.[30] However, such collaborative projects require additional effort and patience from researchers, good relationships among co-investigators, and frequent meetings.[30] For this reason, collaborative groups should establish administrative bodies to ensure effective communication among team members and to manage any issues that arise with active problem solving.

The Fogarty International Center (a branch of the US National Institutes of Health) and the Academy of Medical Sciences in the UK support collaborative research on mental health between investigators in upper middle-income countries and those in low-income or



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middle-income countries through various programmes. The Harvard Medical School Center for Global Health Delivery—Dubai, has gone a step further in its mechanism of cooperative awards by offering epidemiological, biostatistics, and qualitative methods consultation in study development and execution, and methods expertise in the analysis phase, as well as structured writing workshops to promote scholarly outputs of high quality[31] Another example of a successful regional and international collaboration is the School Health Implementation Network: eastern Mediterranean region funded by the US National Institute of Mental Health and involving four countries in the WHO's eastern Mediterranean region.

### Strengthening research infrastructure

Academic institutions in the Arab region need to build the infrastructure necessary for mental health research and to train junior faculty and research staff on conducting research. The infrastructure should include Institutional Review Boards and entities that can provide research support (eg, Clinical Research Institutes). The few institutions that have established such infrastructure in the Arab region seem to have been able to enhance their research productivity. Grant applications from these institutions could be more competitive and research papers more likely to be well received by subject specialists and scientific journals.

Investment in independent academic institutions, such as public health schools, is needed in the Arab region to teach and support research methods. These academic institutions need to prioritise mental health research and encourage collaborations among them to pool resources and funding. This strategy will ultimately help to increase the capacity of local research that can respond to local needs. At the same time, public and private sources at the national and regional levels need to advocate for increased funding of mental health research.

### Strengthening the mental health workforce

In the Arab region, mental-health-care professionals are scarce in the clinical workforce, with reports showing a very low psychiatrist to population ratio. Countries such as Bahrain, Kuwait, and Qatar have fewer than five psychiatrists per 100 000 people, while countries such as Iraq, Libya, Morocco, Sudan, Syria, and Yemen have fewer than 0·5 psychiatrists per 100 000 people.[32] Expenditure of mental health services in the Arab region is about $0·15 per capita, which is half that of global expenditure according to the WHO-Assessment Instrument for Mental health Systems.[33]

Enhancing research in mental health also depends on increasing the size and quality of the clinical workforce. This growth would potentially give clinician-investigators the needed protected time to do high-quality research and psychiatrists the opportunity to contribute to data collection for clinical research. To achieve this goal, governments in Arab countries should incentivise private medical facilities to expand their mental health services and incorporate such services within governmental health-care facilities. Universities should ensure that medical students have adequate exposure to psychiatry and introduce postgraduate training programmes in psychiatry and clinical psychology.

#### Search strategy and selection criteria

We searched Scopus and Web of Science databases under subject categories "psychiatry and mental health", "psychiatric mental health", "psychiatry", "biological psychiatry", and "clinical psychology". We searched Scopus for all articles in any journal or discipline that included in their titles any keyword related to mental disorders or mental health Medical Subject Headings, such as "anxiety disorder", "psychotic disorder", "stress disorder", and "substance abuse".

## Translating mental health research into a call to action on societal and governmental levels

Decision makers in the highest spheres of administrative and political establishments usually depend on the system around them to change or initiate policies in the health sector. This system typically includes well established entities that specialise in various disciplines, such as mental health and related disciplines. Those entities would draw on existing data and encourage decision makers to fund research that addresses major public health issues. Because few scientific advisory bodies exist, Arab researchers need to translate their findings into a language that is accessible to and understandable by governmental administrators and decision makers. This translation is best done in parallel with regular dissemination of research findings to the public to motivate lobbying for change and to health specialists outside the mental health field who themselves are important agents for change in health policy. Researchers also need to prioritise issues of importance to stakeholders, such as the effect of mental health on work productivity,[34] health-care expenditure,[35] physical health, and life expectancies.[36] This process would help decision makers (and society at large) to see the real impact of mental health. For a successful endeavour, mental health researchers are urged to engage stakeholders in prioritising, conducting, and translating research,[37] and governments are urged to acknowledge the role of research in their national mental health strategies.

**Contributors**

FTM and EAA developed the initial idea and put together the first draft. BA, AEB, MC, HD, LAG, SG, EK, BK, AM, LIM, TO, and PZ drafted sections of the first draft. All authors critically reviewed drafts of the manuscript and approved the final version.

**Declaration of interests**

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**References**

1 Demyttenaere K, Bruffaerts R, Posada-Villa J, et al. Prevalence, severity, and unmet need for treatment of mental disorders in the World Health Organization World Mental Health Surveys. *JAMA* 2004; **291:** 2581–90.

2 WHO. mhGAP: Mental Health Gap Action Programme: scaling up care for mental, neurological and substance use disorders. Geneva: World Health Organization, 2008. https://apps.who.int/iris/handle/10665/43809 (accessed May 29, 2019).

3 WHO. The world health report 2001—mental health: new understanding, new hope. Geneva: World Health Organization, 2001. https://www.who.int/whr/2001/en/whr01_en.pdf?ua=1 (accessed May 29, 2019).

4 WHO. Strategy for mental health and substance abuse in the Eastern Mediterranean Region 2012–2016. Geneva: World Health Organization, 2011. https://apps.who.int/iris/handle/10665/123044 (accessed May 29, 2019).

5 Mokdad AH, Forouzanfar MH, Daoud F, et al. Global burden of diseases, injuries, and risk factors for young people's health during 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet* 2016; **387:** 2383–401.

6 GBD 2015 Eastern Mediterranean Region Mental Health Collaborators. The burden of mental disorders in the Eastern Mediterranean region, 1990–2015: findings from the global burden of disease study 2015. *Int J Public Health* 2018; **63** (suppl 1)**:** 25–37.

7 Becker AE, Kleinman A. Mental health and the global agenda. *N Engl J Med* 2013; **369:** 66–73.

8 Jaalouk D, Okasha A, Salamoun MM, Karam EG. Mental health research in the Arab world. *Soc Psychiatry Psychiatr Epidemiol* 2012; **47:** 1727–31.

9 Rayan A, Jaradat A. Stigma of mental illness and attitudes toward psychological help-seeking in Jordanian university students. *Res Psychol Behav Sci* 2016; **4:** 7–14.

10 Sewilam AM, Watson AM, Kassem AM, et al. Suggested avenues to reduce the stigma of mental illness in the Middle East. *Int J Soc Psychiatry* 2015; **61:** 111–20.

11 Karam EG, Karam GE, Farhat C, et al. Determinants of treatment of mental disorders in Lebanon: barriers to treatment and changing patterns of service use. *Epidemiol Psychiatry Sci* 2018; **13:** 1–7.

12 Al-Darmaki FR. Attitudes towards seeking professional psychological help: What really counts for United Arab Emirates university students? *Soc Behav Pers* 2003; **31:** 497–508.

13 Ghosh N, Mohit A, Murthy RS. Mental health promotion in post-conflict countries. *J R Soc Promot Health* 2004; **124:** 268–70.

14 Mandil A, El Jardali F, El Feky S, Nour M, Al Abbar M, Bou Karroum L. Health research institutional mapping: an eastern Mediterranean regional perspective. *East Mediterr Health J* 2018; **24:** 189–97.

15 Soete L, Schneegans S, Eröcal D, Angathevar B, Rasiah R. A world in search of an effective growth strategy. In: Schneegans S, Erocal D, ben Lakhdar Z, et al, eds. UNESCO science report: towards 2030. Paris: United Nations Educational, Scientific and Cultural Organization, 2015: 21–55.

16 Currie-Alder B, Arvanitis R, Hanafi S. Research in Arabic-speaking countries: funding competitions, international collaboration, and career incentives. *Sci Public Policy* 2017; **45:** 74–82.

17 Bazarbachi AA, Khoury SJ, Sayegh MH. Biomedical research in the Arab region. Nov 20, 2014. https://www.natureasia.com/en/nmiddleeast/article/10.1038/nmiddleeast.2014.263 (accessed May 29, 2019).

18 Okasha A, Karam E, Okasha T. Mental health services in the Arab world. *World Psychiatry* 2012; **11:** 52–54.

19 Al-Nuaimi S, Aldandashi S, Easa AK, Saqqur M. Psychiatric morbidity among physically injured Syrian refugees in Turkey. *Compr Psychiatry* 2018; **80:** 34–38.

20 Maalouf FT, Ghandour LA, Halabi F, Zeinoun P, Tavitian L. Psychiatric disorders among adolescents from Lebanon: prevalence, correlates, and treatment gap. *Social Psychiatry Psychiatr Epidemiol* 2016; **51:** 1105–16.

21 Docquier F, Marfouk A. International migration by education attainment, (1990–2000)—release 1·1. March 2005. http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN022366.pdf (accessed May 29, 2019).

22 Ioannidis JP. Why most published research findings are false. *PLoS Med* 2005; **2:** e124.

23 Thornicroft G, Mehta N, Clement S, et al. Evidence for effective interventions to reduce mental-health-related stigma and discrimination. *Lancet* 2016; **387:** 1123–32.

24 Moed HF, Halevi G. A bibliometric approach to tracking international scientific migration. *Scientometrics* 2014; **101:** 1987–2001.

25 Guler J, Roberts MC, Medina-Mora ME, et al. Global Collaborative Team performance for the revision of the International Classification of Diseases: a case study of the World Health Organization Field Studies Coordination Group. *Int J Clin Health Psychol* 2018; **18:** 189–200.

26 Reed GM, Keeley JW, Rebello TJ, et al. Clinical utility of ICD-11 diagnostic guidelines for high-burden mental disorders: results from mental health settings in 13 countries. *World Psychiatry* 2018; **17:** 306–15.

27 Reed GM, Sharan P, Rebello TJ, et al. The ICD-11 developmental field study of reliability of diagnoses of high-burden mental disorders: results among adult patients in mental health settings of 13 countries. *World Psychiatry* 2018; **17:** 174–86.

28 Supplement on ICD-11. *Arab J Psychiatry* 2012; **23** (suppl 1).

29 Baingana F, Al'Absi M, Becker AE, Pringle B. Global research challenges and opportunities for mental health and substance-use disorders. *Nature* 2015; **527:** S172.

30 Cobban SJ, Wilson MP, Covington PA, Miller B, Moore DP, Rudin SL. A proposed model for a collaborative approach to dental hygiene research. *Int J Dent Hyg* 2005; **3:** 185–91.

31 Harvard Medical School Center for Global Delivery—Dubai. Healing life. Delivering care. Building an ecosystem for change (2016–2018). https://ghd-dubai.hms.harvard.edu/files/ghd_dubai/files/hmsdubai_progressreport2018_web.pdf (accessed May 29, 2019).

32 Okasha A, Karam E, Okasha T. Mental health services in the Arab world. *World Psychiatry* 2012; **11:** 52–54.

33 Jain A, Saeed K, Arnaout S, Kortum E. The psychosocial environment at work: an assessment of the World Health Organization Regional Office for the Eastern Mediterranean. *East Mediterr Health J* 2012; **18:** 325–32.

34 Kessler RC, Akiskal HS, Ames M, et al. Prevalence and effects of mood disorders on work performance in a nationally representative sample of US workers. *Am J Psychiatry* 2006; **163:** 1561–68.

35 Egede LE, Zheng D, Simpson K. Comorbid depression is associated with increased health care use and expenditures in individuals with diabetes. *Diabetes Care* 2002; **25:** 464–70.

36 Chang CK, Hayes RD, Perera G, et al. Life expectancy at birth for people with serious mental illness and other major disorders from a secondary mental health care case register in London. *PLoS One* 2011; **6:** e19590.

37 Boaz A, Hanney S, Borst R, O'Shea A, Kok M. How to engage stakeholders in research: design principles to support improvement. *Health Res Policy Syst* 2018; **16:** 60.

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