









Language as Multi-Level Barrier in Health Research and the Way Forward

Ramdas Ransing¹ , Ramyadarshni Vadivel² , Sarah El Halabi³ , Chonnakarn Jatchavala⁴ , Mohammadreza Shalbfan⁵, Camille Noël⁶ , Isa Multazam Noor⁷ , Anne Yee⁸, Ahmet Gürcan⁹  and Rodrigo Ramalho¹⁰ 

As of 2021, there are 7,139 spoken languages recorded, with more than half having no written form.¹ Of these, only 23 are spoken by more than half of the world's population and claim disproportionate dominance.¹ Furthermore, health research, including mental health research, is disproportionately dominated by English, followed by other dominant languages such as Spanish and Russian.² The issue, however, is broader than the establishment of English as the lingua franca of academia. This in itself can diminish the possibilities for low- and middle-income countries (LMICs); Asian, Middle Eastern, Latin American, and African countries; and non-English speakers to disseminate their research and viewpoints.³ But, as we move away from the dominance of the English language in scholarly journals, we



¹Dept. of Psychiatry, BKL Walawalkar Rural Medical College, Ratnagiri, Maharashtra, India. ²Dept. of Mental Health and Addictions, Waikato District Health Board, Hamilton, New Zealand. ³Dept. of Narrative Medicine, Columbia University, New York, New York, USA. ⁴Dept. of Psychiatry, Faculty of Medicine, Prince of Songkla University, Songkhla, Thailand. ⁵Mental Health Research Center, Dept. of Psychiatry, School of Medicine, Iran University of Medical Sciences, Tehran, Iran. ⁶Child Psychiatry Dept., Centre Hospitalier Universitaire Saint-Pierre, Université Libre de Bruxelles, Brussels, Belgium. Child and adolescent psychiatry hospital La Petite Maison ACIS, Chastre, Belgium. ⁷Psychiatric Dept., YARSI University, Jakarta, Indonesia. ⁸Dept. of Psychological Medicine, University of Malaya, Kuala Lumpur, Malaysia. ⁹Dept. of Psychiatry, Koru Ankara Hospital, Ankara, Turkey. ¹⁰Dept. of Social and Community Health, School of Population Health, The University of Auckland, Auckland, New Zealand.

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Address for correspondence: Ramdas Ransing, Dept. of Psychiatry, BKL Walawalkar Rural Medical College, Ratnagiri, Maharashtra 415606, India. E-mail: ramdas_ransing123@yahoo.co.in

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continue to find some significant inequities at different stages of research itself.⁴ These inequities in health research could significantly impact health policies, national and global programs, and the delivery of appropriate, acceptable, and scalable health services, through hindering access to crucial information related to health.⁵

In this article, “dominant language” refers to the official or formal language of a specific setting or the language spoken by most people in that setting. In contrast, “minor language” refers to any non-dominant language or language spoken by a small fraction of people in the same setting. For example, In India, Hindi is the dominant language spoken by the majority of the population in the northern states. Languages other than Hindi (e.g., Kannada, Tamil) could be considered minor languages in these states. The dominance of Hindi could then affect the inclusion of people who speak these minor languages in health research. For example, despite being a vulnerable population (e.g., migrants), these minor-language speakers may not be recruited for research by researchers who speak Hindi. In subsequent stages of the research cycle, that is, at the publication stage, these researchers, the dominant language speakers themselves as speakers of Hindi, could then become minor language speakers, as English is the dominant language of academic publishing.

Language minoritization or minorization, then, can affect all stages of the research cycle. These linguistic barriers and their resulting inequities (e.g., underrepresentation in health research or barriers to conducting research and disseminating findings) are areas in global health research that need to be addressed. In our opinion, the language has a greater impact on mental health research than other health research because majority of psychiatric diagnoses are based on clinical histories reported by the patients or caregivers themselves. Therefore, the failure to ensure effective communication increases the risk of misdiagnosis and inappropriate treatment.⁶ Furthermore, limited language proficiency has been reported as a barrier to mental health service use among person with psychiatric disorders in Africa and the United States of America.^{7,8} This article aims to share

our perspective on how linguistic minorities are systematically discriminated against at the different stages of health research including mental health, the impact of this, and some potential ways forward.

Scientific Literature

Much of the impactful literature globally (e.g., research articles and books) has been written in a dominant language (e.g., English, Spanish, Chinese).⁹ Authors commonly prefer to publish in these languages, most commonly English, to increase the visibility and impact of their publication.^{10,11} However, these selective preferences may act as a barrier to research dissemination for researchers who are not fluent in English. As a result, the scientific literature may end up dominated by researchers from English-speaking countries or countries with a high prevalence of people speaking English as an additional language. Researchers who speak languages other than English and that have a greater impact, such as Spanish, French, or German, are still overrepresented in high-income countries.⁹ The result is an omission of most researchers, mainly from LMICs where these languages are often not an additional language or the researchers are not fluent in English.

Health Information

Governments and international organizations (e.g., World Health Organization [WHO]; The United Nations Educational, Scientific and Cultural Organization [UNESCO]; and the United Nations Children’s Fund [UNICEF]) often publish health-related information and updates in a dominant language (e.g., English or Spanish).¹² Consequently, this information is often inaccessible to people, including healthcare providers, policy-makers, and researchers, who do not speak these languages as their primary or additional language. This is not the case for health-related information alone, although we are emphasizing this for the purposes of this article.

Study Tools

Most study tools or questionnaires have been made available or validated in English or other dominant languages. The translation and validation in local, minor languages is often

time-consuming and puts a financial burden on researchers and local funding agencies.¹³ This issue is particularly difficult to address when a minor language exists only in verbal form, as is the case with many languages in Asia (e.g., Korku in India). As a result, researchers in areas where such languages are the dominant ones may prefer to avoid the translation, validation, and utilization in research of these study tools.

Recruitment in Health Research

Linguistic differences could also result in barriers to effective participant recruitment in health research,¹⁴ an issue often underreported in the health research literature.¹⁵ This could negatively impact the ability to generalize research findings to populations who speak minor languages, populations often affected by health inequities. Similarly, the likelihood of recruiting diverse linguistic groups is low due to difficulties in translating and validating available tools, collaborating with interpreters and translators in developing participant information sheets, and data collection and analysis. This perpetuates the underrepresentation of linguistic minorities in health research, with its accompanying difficulties in codeveloping effective and culturally safe healthcare and health promotion strategies with these groups.¹⁴

Dissemination of Findings (e.g., Publications, Conferences)

In the world of scientific literature, only a small proportion of researchers are native English speakers, a language dubbed the “language of science.”¹⁶ Acceptance of scientific work from non-native speakers for publication remains low, and one of the commonly cited reasons is the critique of language, over the content of the findings.¹⁷ Some journals suggest language editing services to researchers, but this comes with a cost.^{18,19} Authors, especially from LMICs, may then decide to publish their findings in non-indexed journals, ultimately missing out in subsequent literature reviews. The result is a vicious cycle of such findings being unnoticed, a systematic skewing and low research output, and

underrepresentation of both researchers and their researched populations.

Some Recommendations

Researchers/Authors

As Amano et al. suggest, it could prove useful for literature reviews or research aiming to compile existing knowledge, not to overlook knowledge created in the nondominant languages.² However, this could prove challenging due to the time and resources necessary to access, translate, and understand this literature. Still, whenever possible, it would be advisable for researchers and authors to work effectively with translators. The use of machine learning methods or artificial intelligence to translate scientific literature might be cost-effective, but these methods are still in the development process.²⁰

Similarly, it should be recommended for researchers to work effectively with interpreters to recruit participants who speak minor languages. However, this could also prove particularly difficult in countries with rich linguistic diversity (e.g., India, Indonesia). When attempting to publish in English, authors may use certain software to improve English (e.g., Grammarly®) at the manuscript preparation stage when there is no access to editing agencies or peers and colleagues who could assist. However, the cost of these software is an impediment to their use for LMICs authors.

Government and Nongovernment Organizations

Government and non-government organizations should include nondominant languages in their communications and health campaigns. However, the required resources may hinder the possibility of including a wide range of minor languages, even for international organizations such as the WHO. Still, it could be helpful for governments to develop language translation services for health research and the dissemination of health-related and other information. These services could potentially also assist researchers with translating different study tools and questionnaires. This would increase the reach of the information provided, make it readily available for researchers who speak those

nondominant languages, and increase health research with people who speak minor languages.

Funding Agencies

To overcome linguistic barriers, funding agencies and governments should provide additional funding supporting health research targeting people who speak minor languages, potentially prioritizing projects carried out by researchers who speak the same minor language. To improve access to health research, including mental health, a portion of the funding should be used to cover the costs of bilingual service providers and interpretation services for immigrants with psychiatric disorders.⁷ While it is ideal to aim for the multilingualization of new and existing knowledge, an interim measure could be for funding agencies, academic institutions, and scientific journals to consider providing financial support or fee waiver for sound research to be translated or edited for publication.

Editors/Reviewers

As previously stated, one of the most commonly cited reasons for not accepting scientific work from non-native English authors or countries may be a preference for English language over scientific merit.¹⁷ Moreover, the low research output from Asian and African countries is mostly due to difficulties with English.^{2,19,21} To overcome this challenge, it could prove useful for scientific journals to ask reviewers to focus on the quality and scientific content of the manuscript over the use of English, particularly when the research originated in countries where English is not a dominant language.

Future Directions

It remains necessary to shed further light on the impact of these linguistic barriers in the knowledge creation and dissemination process and on issues of representation. This calls for well-planned studies on the impact of these barriers at multiple levels and stages of the research process and their ripple effects. The findings from these studies would help formulate guidelines that could reduce the negative impact of these barriers, and in effect, the barriers themselves. Furthermore, as languages

are an important part of a culture, linguistic research could explore the various unseen dimensions of cultural aspects of health.

Conclusion

To conclude, systematic linguistic discrimination could be contributing to a vicious cycle of inequity in knowledge creation and publication worldwide. It is necessary to explore and eliminate existing linguistic barriers in the process of research and publication. This would improve the generalizability of research findings and help the development of appropriate and effective evidence-based preventive or therapeutic interventions and policies and programs. Ultimately, the goal is to celebrate language diversity and reduce knowledge and health inequities across the globe.









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ORCID iDs

Ramdas Ransing  <https://orcid.org/0000-0002-5040-5570>
 Ramyadarshni Vadivel  <https://orcid.org/0000-0002-7055-5250>
 Sarah El Halabi  <https://orcid.org/0000-0003-2012-6041>
 Chonnakarn Jatchavala  <https://orcid.org/0000-0001-9765-2184>
 Camille Noel  <https://orcid.org/0000-0002-4262-2049>
 Isa Multazam noor  <https://orcid.org/0000-0002-0330-1664>
 Ahmet Gurcan  <https://orcid.org/0000-0002-3545-8981>
 Rodrigo Ramalho  <https://orcid.org/0000-0002-2372-6854>

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