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Global health reciprocal innovation to address mental health and well-being: strategies used and lessons learnt

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ABSTRACT

Over the past two decades there have been major advances in the development of interventions promoting mental health and well-being in low- and middle-income countries (LMIC), including delivery of care by non-specialist providers, incorporation of mobile technologies and development of multilevel community-based interventions. Growing inequities in mental health have led to calls to adopt similar strategies in high-income countries (HIC), learning from LMIC. To overcome shared challenges, it is crucial for projects implementing these strategies in different global settings to learn from one another. Our objective was to examine cases in which mental health and well-being interventions originating in or conceived for LMIC were implemented in the USA. The cases included delivery of psychological interventions by non-specialists, HIV-related stigma reduction programmes, substance use mitigation strategies and interventions to promote parenting skills and family functioning. We summarise commonly used strategies, barriers, benefits and lessons learnt for the transfer of these innovative practices among LMIC and HIC. Common strategies included intervention delivery by non-specialists and use of digital modalities to facilitate training and increase reach. Common barriers included lack of reimbursement mechanisms for care delivered by non-specialists and resistance from professional societies. Despite US investigators' involvement in most of the original research in LMIC, only a few cases directly involved LMIC researchers in US implementation. In order to achieve greater equity in global mental health and well-being, more efforts and targeted funding are needed to develop best practices for global health reciprocal innovation and iterative learning in HIC and LMIC.

SUMMARY BOX

⇒ Research and practice in mental health and well-being have recently begun to employ global health reciprocal innovation—in which countries across the globe collaborate and learn from each other—yet little is known about the strategies that can make this type of multidirectional learning more successful.

⇒ The current analysis reviews case examples in which high-income countries have learnt from experiences in low- and middle-income countries to develop and test innovative interventions to promote mental health and well-being in underserved populations, including people living with HIV.

⇒ This analysis will allow researchers and implementers to benefit from lessons learnt across diverse settings and to advocate for policies and funding that support this type of ground-breaking work, with the potential to improve mental health and well-being globally.

INTRODUCTION

As people live longer with chronic conditions globally, the need to address mental health and related challenges to health and well-being has become increasingly apparent.[1] With this, there is growing recognition that people everywhere need to benefit from the innovations being tested and implemented globally and work collaboratively and learn from one-another. The term global health reciprocal innovation (GHRI) was recently coined to describe bidirectional and iterative exchange of ideas, resources and innovations to address shared health challenges across diverse global settings.[2]

In low- and middle-income countries (LMIC), there has been a long-standing major gap between the number of people experiencing mental health conditions and the availability of quality care. Prior estimates indicate that only 1 out of 26 people with depression and 1 out of 100 people living with anxiety have access to minimally adequate care in LMIC.[3][4] These major constraints have stimulated innovative strategies to deliver mental health services through non-specialists in LMIC.[5] Task shifting mental health service delivery comes from the recognition that the reliance on specialists such as psychiatrists

and psychologists to deliver mental healthcare will not reduce inequities in LMIC.[6] Instead, continuum of care models with integration of non-specialists are being implemented with an emphasis on community-based care, collaborative care, stratified care and stepped care.[7] These approaches build on public health strategies,[8] rely on major contributions of community health workers and community members[9 10] and are increasing availability and accessibility of mental health services in LMIC. Based on the feasibility and effectiveness of these strategies, the 2022 World Mental Health Report highlighted the use of non-specialists and continuum of care implementation as pillars of successful mental health service delivery.[11]

Increased usage of non-specialists for delivery of health interventions was catalysed by the HIV response in many LMIC, as working with community members and other non-specialists to reach affected populations has been a key strategy in LMIC to extend the reach of HIV services and reduce HIV stigma. There is also growing recognition that stigma has negative impacts on mental health,[12] and that this is a key pathway for adverse effects on other health outcomes.[13] Thus, the HIV response has included the development of a multitude of innovative community-engaged strategies to address stigma and other mental health challenges faced by people living with HIV in LMIC.[14] These strategies also include other innovative community-based implementation strategies such as mHealth tools, collaboration with primary healthcare workers and multilevel approaches—that could also benefit populations in high-income countries (HIC).

At a population level, HIC have a higher availability of mental health services than LMIC: one out of five individuals living with depression receive minimally adequate care in HIC.[3] However, this can mask wide inequities within high resource settings. Historically minoritised groups in many regions of the USA, for instance, have low usage rates of mental health services, with racial and ethnic inequities in mental healthcare worsening in recent decades.[15] This has led mental health researchers and practitioners to explore how strategies from LMIC could be leveraged in HIC to reduce these longstanding, and in some cases, worsening inequities.

In HIC in the Americas and Europe, community-based approaches for increasing access to mental health are gaining momentum.[16] For example, in the USA, the translation and adoption of innovations in mental health from LMICs is increasingly supported by policymakers. In 2023, the US White House Report on Mental Health Research Priorities[17] calls for pilot programmes to train paraprofessionals to deliver mental health services as a path to reducing inequities within mental healthcare. In addition to expanding the scope of who delivers services, the White House Report calls for changing the emphasis on where services are delivered with greater investments in primary care, communities and the justice system— all strategies that have a strong evidence base in LMIC. In addition, city governments and state governments are implementing global mental health strategies such

as programmes in the New York City Mayor's Office of Community Mental Health[18] and the State Government of New York.[19] Insurance companies, such as Blue Cross Blue Shield of Massachusetts, are also implementing interventions in Boston that were developed for humanitarian emergencies in LMICs.[20] Similarly, the Ending the HIV Epidemic Initiative in the USA has a strong focus on underserved rural areas, where HIV incidence is often highest, and embraces innovative community-centred approaches to delivering HIV prevention and treatment.[21]

These strategies align well with the concept of GHRI.[22 23] As opposed to the dominant practice of researchers from HIC directing what and how interventions will be done in LMIC, reciprocal learning emphasises the equitable involvement of LMIC researchers in informing and shaping practices in HIC. With successful reciprocal learning, there is an array of opportunities for lessons learnt from LMIC to inform care in the USA and other HIC, and for simultaneous or subsequent experiences in HIC to feedback and inform programmes in LMIC. This can occur in an ongoing iterative fashion where advances, adaptations and improvements to interventions are facilitated over time and on an ongoing basis.

There are a growing number of examples of GHRI in which initiatives in LMIC are being adapted and implemented in the USA and other HIC,[19] as well as in other LMIC. For GHRI to be effective, efficient and become standard practice, there is a need to review how initial examples of the strategy have been carried out and what successes and challenges were encountered. Our objective is to review case examples in the field of mental health and HIV stigma reduction to extract what lessons learnt should inform future GHRI for mental health and well-being. Successful reciprocal learning will contribute to a more equitable global mental health research community and greater alleviation of suffering associated with mental illness and other stigmatised conditions.

We convened a group of experts in the fields of mental health, global health and HIV stigma-reduction, mainly identified from participants in a webinar (2020) and/or a workshop (2022) on GHRI organised by the National Institutes of Health (NIH) Fogarty International Center (FIC).[24] These experts, based in both LMIC and HIC settings, worked together to identify domains of interest for examining GHRI work in the mental health and stigma-reduction areas, as well as key case study examples.

Inclusion criteria for the case examples were: (1) a defined intervention specifically addressing mental health and well-being, including stigma reduction; (2) evidence of reciprocal implementation in at least one LMIC and one HIC setting; and (3) evidence of interaction and multidirectional learning between the different country sites. The team reviewed 14 potentially relevant case examples before selecting the 12 examples examined in detail in this paper. Domains examined in included studies were: countries

involved; conceptual and other frameworks used; type of GHRI design and directionality; core intervention name and type; research/project team composition and modes of collaboration; health system contexts; intervention adaptation methods used; intervention delivery modalities; funding sources and mechanisms; barriers/challenges encountered; benefits of the GHRI collaboration; special resources needed; outcomes measured; involvement of people with lived experience; unintended (positive or negative) consequences; and other lessons learnt.

Members of the expert group used a standard form to extract information on each of the identified domains from peer reviewed and grey literature, scientific presentations and media articles on the GHRI case studies. When not present in the expert group team, investigators directly involved in the GHRI case implementation and evaluation were consulted to obtain information on domains that were not fully elucidated in the available sources. Information across cases for each domain was then summarised and synthesised.

CASE EXAMPLES OF GLOBAL HEALTH RECIPROCAL INNOVATION

Case examples included in this review are presented in table 1. Illustrative case examples are presented in further detail in boxes 1–3.

GHRI designs

Most interventions in our case examples were derived from psychological techniques developed in HIC for delivery by mental health specialists (eg, cognitive behavioural therapy, motivational interviewing), that were then adapted for delivery using task-sharing approaches in LMIC. After demonstrated success in LMIC settings, the strategies were re-adapted for delivery in the USA (eg, EMPOWER, Friendship Bench); we refer to these as sequential designs. There were also cases of simultaneous designs with parallel implementation in LMIC and HIC settings (Zambia Alabama HIV Alcohol Comorbidities Programme, ENGAGE). In all cases there was some level of feedback, communication and collaboration between the LMIC site and the HIC site.

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some level of feedback, communication and collaboration between the LMIC site and the HIC site.

Countries/locations involved
LMIC in Africa, South Asia, South America and the Caribbean were represented, with most case examples involving sites in Africa. Case examples included in this analysis all involved the USA as the HIC setting, with states including Alabama, Massachusetts, New York, North Carolina and Texas.

Types of mental health and well-being addressed
All case examples focused on aspects of improving mental health and well-being, including stigma reduction. Of our examples, seven focused on common mental disorders, three on HIV-related stigma reduction, three on substance use disorders and two on family/child mental health. Four examples addressed combinations of these.

Core intervention characteristics
Interventions included a variety of mental health/psychological interventions (Problem Management Plus (PM+), Common Elements Treatment Approach, Interpersonal Counselling, the Friendship Bench, Safety Planning Intervention, Motivational Interviewing and Behavioural Activation), three HIV-related stigma reduction interventions, and family interventions including family therapy and parenting skill building. Unifying aspects include the focus on mental health and well-being and the ability of these interventions to be delivered by non-specialists.

Research/project team(s) composition and modes of collaboration
All projects involved collaboration between the teams from each setting. The degree of collaboration ranged from consultation/advice from someone on the original LMIC country team to a few cases of multiple investigators from each site maintaining joint leadership of the subsequent project. Simultaneous implementation designs seemed to have more depth of collaboration and real-time integration than sequential designs. The Friendship Bench from Zimbabwe is a strong example of an LMIC team having ongoing 'ownership' of the intervention model as it is implemented in new settings (box 2).

Health systems and other context
Implementation in LMIC was typically conducted through government primary healthcare facilities, with some examples of implementation in community settings (schools, churches, etc). In the USA, implementation contexts were more varied, often involving specialty mental health/substance use clinics or community-based organisations (CBOs) that deliver mental health or HIV prevention and treatment services, usually in collaboration with state/local health departments.

Table 1 Case examples of global health reciprocal innovation (GHRI) in mental health and well-being

Case name	Health condition	Countries involved	Intervention characteristics	Delivery location	Delivery modality	Theoretical framework(s)	Funding
FRESH (USA)[35] CREEV (DR)[36] UCSF HIV/AIDS Stigma Project (Africa)[37]	HIV	Lesotho, Malawi, South Africa, Swaziland, Tanzania ⇒ USA, Dominican Republic	HIV stigma reduction workshops (sharing information, increasing client contact, client empowerment)	▲ LMIC/HIC: Academic and public HIV clinics.	▲ In-person. ▲ Group. ▲ Trained non-professionals.	▲ ADAPT-ITT model.[38]	▲ NIH-FIC. ▲ NIH-CFAR. ▲ University pilot funds.
RECOUP PM+	CMD	Nepal ⇒ USA	Problem Management Plus (PM+): Brief counselling intervention for CMD (problem-solving, stress management, behavioural activation, promoting social support)[39]	▲ LMIC: Healthcare facilities or patient homes. ▲ HIC: Community organisations.	▲ In-person. ▲ Virtual. ▲ Individual. ▲ Trained non-professionals.	▲ mhCACI procedure[27] for cultural adaptation. ▲ RE-AIM.[40]	▲ NIH-NIMH.
CETA-ZAMBAMA	HIV CMD SUD PTSD	Zambia⇔USA, Ukraine, Myanmar	Common Elements Treatment Approach (CETA): An integrated protocol for substance use, depression, trauma and anxiety based on cognitive behavioural therapy[41]	▲ LMIC/HIC: Public HIV clinics, refugee camps. ▲ HIC: HIV clinics, tribal health service.	▲ In-person. ▲ Virtual. ▲ Individual. ▲ Trained non-professionals.	▲ Cultural Adaptation Framework.[42] ▲ Depasse and Lee.[43] ▲ Andersen's Behavioural Model.[44] ▲ CBPR.[45] ▲ RE-AIM.[40]	▲ NIH-NIDA. ▲ NIH-NIAAA. ▲ NIH-NIMH. ▲ PEPFAR.
PIC-TB/ENGAGE	TB/HIV CMD	USA⇔South Africa	Interpersonal Counselling (IPC): A brief counselling intervention for depression based on interpersonal therapy[46]	▲ LMIC: Primary care facilities. ▲ HIC: Mental health clinics.	▲ In-person or virtual (telehealth). ▲ Individual. ▲ Trained non-professionals (lay counsellors).	▲ Information-Motivation-Behaviour framework.[47] ▲ Wainberg et al adaptation model.[48] ▲ RE-AIM.[40]	▲ NIH-NIAID. ▲ NIH-NIMH. ▲ NIH-FIC. ▲ NIH-NIAAA. ▲ SAMHSA. ▲ New York State Office of Mental Health.
PRIDE[49]/ENGAGE	SUD CMD Suicide risk SMD	Mozambique ⇒ USA	IPC for depression[46] Motivational Interviewing for SUD[50] Safety Planning Intervention for suicidality[51] Digital screening tools with intervention and/or triage assistance. Medication algorithm for SMD (LMIC only)	▲ LMIC: Primary care facilities ▲ HIC: Mental health clinics, plans to expand to community centres.	▲ In-person or virtual (telehealth). ▲ Individual. ▲ Trained non-professionals (lay counsellors); trained non-specialists (primary care providers).	▲ Proctor's Implementation Framework.[52] ▲ Wainberg et al adaptation model.[48] ▲ RE-AIM.[40]	▲ NIH-NIMH. ▲ NIH-FIC. ▲ NIH-NIAAA. ▲ New York State Office of Mental Health. ▲ SAMHSA.

Table 1 Continued

Case name	Health condition	Countries involved	Intervention characteristics	Delivery location	Delivery modality	Theoretical framework(s)	Funding
Friendship Bench[53]	CMD	Zimbabwe => USA, Malawi, Kenya, Vietnam, Canada, Tanzania, Colombia, South Africa	Problem Solving Therapy/ Coaching A6 session individual intervention delivered on a bench outside a healthcare facility, followed by a peer-facilitated support group in the community[54]	▲ LMIC/HIC: Public and private healthcare facilities, community centres.	▲ In-person. ▲ Support groups. ▲ Trained and supervised non-professionals.	▲ RE-AIM.[40] ▲ CFIR.[55] ▲ MRC.[56]	▲ NIH-NIMH. ▲ NIH-NIDA. ▲ Diverse research grants, philanthropy and private funding.
UNITY[57]	HIV	Ethiopia Tanzania Zambia => USA	HIV Stigma Toolkit: Participatory exercises designed to combat HIV stigma and promote care and support, first developed in African countries and adapted for the USA[58]	▲ LMIC: Community primary care and HIV clinics. ▲ HIC: Public and private HIV clinics.	▲ In-person. ▲ Group. ▲ Trained non-professionals working with professionals.	▲ Corrigan's best practices for strategic stigma change.[59]	▲ NIH-NIMH.
HARAMBEE[60]	HIV	Ghana => USA (African immigrant population)	HIV stigma reduction health fairs that also offer community-based HIV testing and other health screenings	▲ LMIC/HIC: Community centres.	▲ In-person. ▲ Group. ▲ Trained non-professionals working with professionals.	▲ Earnshaw's et al Stigma and HIV Disparities Model.[61]	▲ NIH-NIAID Seattle King County Dept. of Public Health.
EMPOWER[62]	CMD	India => USA	Behavioural activation: EBT for depression EMPOWER initiative: Digital tools to train, supervise and support community health workers in delivering brief EBTs	▲ LMIC: Healthcare facilities. ▲ HIC: Healthcare facilities and community centres.	▲ In person. ▲ Individual. ▲ Healthcare workers who are not mental health specialists.	▲ Theory of change workshops.	▲ Wellcome Trust. ▲ NIH-NIMH. ▲ Grand Challenge Canada. ▲ Private foundations. ▲ Lone Star Prize.
PARENT CORPS[63]	CMD (children)	USA => Uganda Nepal	Classroom-based social-emotional learning groups for children alongside educational discussion groups for parents and staff	▲ HIC/LMIC: Schools.	▲ In-person. ▲ Group. ▲ Trained non-professionals working with professionals.	▲ Teacher Training Implementation Model.[64] ▲ CFIR.[55]	▲ NIH-NIMH. ▲ University pilot funds.
COPING TOGETHER	CMD	Kenya⇔ USA	Tuko Pamoja (Kenya)/ Coping Together (USA): Modular family therapy (problem solving, communication, coping skills and parenting skills)[65]	▲ LMIC: Patient homes. ▲ HIC: Virtual.	▲ In person. ▲ Virtual. ▲ Trained non-professionals.	▲ CBPR.[45] ▲ RE-AIM.[40]	▲ Grand Challenges Canada. ▲ University funds.

Continued

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Case name	Health condition	Countries involved	Intervention characteristics	Delivery location	Delivery modality	Theoretical framework(s)	Funding
PEER HELPER	SUD HIV	South Africa ⇔ USA	Khanya (South Africa)/ Peer Activate (USA): Interventions for substance use and HIV treatment adherence (behavioural activation, motivational interviewing, problem solving, mindfulness, recovery support)	▲ LMIC: Integrated HIV/primary care clinics ▲ HIC: Methadone treatment facility, community resource.	▲ In-person. ▲ Individual. ▲ Trained non-professional (peers).	▲ ADAPT-ITT.[38] ▲ RE-AIM.[40] ▲ EPIS.[66]	▲ NIH-NIDA. ▲ NIH-HEAL Initiative. ▲ University of Maryland. ▲ MPower funds.

ADAPT-ITT, Assessment, Decision, Adaptation, Production, Topical experts, Integration, Training and Testing model; CBPR, community-based participatory research; CFAR, Centers for AIDS Research; CFIR, Consolidated Framework for Implementation Research framework; CMD, common mental disorder ; CREEV, Construir Respeto y Eliminar el Estigma en torno a VIH; DR, Dominican Republic; EBTs, Evidence-based Therapies; EPIS, Framework-Exploration, Preparation, Implementation, Sustainment Framework; FIC, Fogarty International Center; FRESH, Finding Respect and Ending Stigma around HIV; HEAL, Helping to End Addiction Long-term Initiative; HICs, high-income countries; LMICs, low- and middle-income countries; mhCACI, mental health Cultural Adaptation and Contextualisation for Implementation; MRC, Medical Research Council framework; NIAAA, National Institute on Alcohol Abuse and Alcoholism; NIAID, National Institute of Allergy and Infectious Diseases; NIDA, National Institute on Drug Abuse; NIH, National Institutes of Health ; NIMH, National Institute of Mental Health; PEPFAR, US President's Emergency Plan for AIDS Relief; PIC, Philisa Ingqondo; PRIDE, Partnerships in Research to Implement and Disseminate Sustainable and Scalable Evidence-Based Practices; PTSD, Post-traumatic stress disorder; RE-AIM, Reach, Efficacy, Adoption, Implementation, Maintenance model; RECOUP, Restoring mental health after COVID-19 through community-based psychological services; SAMHSA, Substance Abuse and Mental Health Services Administration; SMD, severe mental disorder; SUD, substance use disorder; TB, tuberculosis; UCSF, University of California, San Francisco; ZAMBAMA, Zambia Alabama HIV Alcohol Comorbidities Programme.

> **Box 1 Taking the Finding Respect and Ending Stigma around HIV stigma reduction intervention from Africa to Alabama to the Dominican Republic**
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> **Description of the intervention:** Intergroup contact and empowerment intervention to reduce HIV-related and intersectional stigmas in healthcare settings.
>
> **Type of global health reciprocal innovation (GHRI):** HIV-related stigma reduction in-person workshop intervention originally developed and tested in five countries in Africa, adapted and tested in Alabama, followed by adaptation and implementation in the Dominican Republic (DR). Ongoing work to incorporate lessons from the DR into future implementation in US South.
>
> **What worked well?** The teams in each setting were able to use and adapt tools and detailed implementation manuals from the prior settings and get input from those involved in prior implementation. The use of formative research in each setting helped to tailor the intervention to the populations and types of stigmas most salient in that setting. Shared leadership from the different country teams (multiple principal investigator model) worked well for the DR implementation research.
>
> **What did not work so well?** The community nature of the HIV clinics in the African setting (where clients and providers from the same health facility participated in each workshop) was hard to replicate in the urban settings in Alabama and the DR. This also made it difficult to include collaborative stigma-reduction projects following the workshop, as had been part of the African model. High levels of HIV-related and sexual gender minority stigma in the communities in Alabama and the DR, and related lack of disclosure, made it more difficult to engage clients in that setting. Changing leadership at the health systems level and challenges with obtaining clinical-level data for evaluation can adversely affect implementation.
>
> **Take away lessons:** Commitment of health system authorities is crucial in each setting where the innovation will be introduced and need constant attention over the life of the project. True collaborative shared leadership of the GHRI work across settings and projects is highly beneficial and assures that the core elements of the intervention are maintained and important knowledge and lessons are not lost. Flexibility and adapting to the specific needs, populations, strengths and contexts in each setting are crucial.

Intervention delivery modalities in the different settings

Interventions involved a mix of in-person and remote delivery modes, with a few using both in the same project/location. Most of the interventions were delivered in-person by non-specialists in both types of settings, with more remote delivery in the HIC settings, especially in the context of the COVID-19 pandemic (eg, RECOUP-NY and other adaptations of PM+).[25] Interventions included both group and one-on-one modalities. A few projects had the intervention delivered by a pair/triad of interventionists together, including both peer specialists and professionals.

Intervention adaptation methods and frameworks used

To adapt the LMIC intervention to the US setting, some cases reported the use of formal cultural/context intervention adaptation frameworks and procedures, such as Assessment, Decision, Adaptation, Production, Topical

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Box 2   Friendship Bench—a mental health programme from Zimbabwe is adapted for implementation in other low- and middle-income countries (LMICs) and high-income countries (HICs)

Description of the intervention: Friendship Bench (FB) is a task-shared intervention offered by trained and supervised community mental health workers attached to primary healthcare clinics. The programme offers up to six individual counselling sessions that focus on problem solving strategies and behavioural activation to decrease symptoms of common mental disorders such as depression and anxiety (described as thinking too much 'kufungisisa' in the local language). Beneficiaries are also invited to take part in support groups that offer income generation activities. The programme has been adapted by the Ministry of Health and is currently being rolled out nationwide in Zimbawe.

Type of global health reciprocal innovation: LMIC to HICs The FB concept had been applied under NYC Department of Health and Mental Hygiene THRIVE programme in 2017. In 2022, the programme has been implemented within Athens (Ohio) Department of Health as a county-wide offer to help seekers, as well as in London, Ontario with a focus on racialised minorities with collaboration from the Canadian Mental Health Association. **LMIC to LMICs**: The programme has been adapted and tested in Malawi and Vietnam involving research teams from US Universities (University of North Carolina (UNC) as well as in South Africa (University of Washington (UW), UNC). Other regional implementations were carried out in collaboration with local health authorities (Tanzania, Kenya).

What worked well? International research teams carried out research and build capacity in Zimbabwe. Research results gave the programme credibility and helped to refine the original implementation. Implementation partners worked closely with original developers and together adapted training and other material as needed while maintaining the programme's core aspects.

What did not work so well? While the original FB programme is a standing mental health intervention in a resource constrained setting such as Zimbabwe, HIC implementation of the FB focuses more on increasing access to mental healthcare by bringing awareness about mental health and existing support structures to those needing help. To avoid any confusion with registered therapy providers, delivering agents in HIC are trained to use terms such as listening and supporting only. The HIC implementation is done with adapted training material to meet partners' needs and thus is less focused on some of the Zimbabwe context aspects (HIV focus, primary healthcare context, support group approach was often seen as not easily applicable). In the HIC settings, the programme still needs to gain wide recognition in the existing health systems and specific research has not been carried out yet.

Take away lessons: Fidelity to the programme and its core aspects as well as recognition of original developers as well as data sharing and programme use agreements are important. New implementation partners thus need to plan and support ongoing collaboration through applied implementation research. This will foster mutual learning and make the programme overall stronger which will benefit programme users, inform policymakers and decrease the global mental health treatment gap.

Box 3   Restoring mental health after COVID-19 through community-based psychosocial services in NYC (RECOUP-NY)—Scaling up Problem Management Plus (PM+) from Nepal to New York City

Description of the intervention: Developed by the WHO, PM+ is a task-sharing mental health intervention delivered over five sessions. During these sessions, PM+ covers four key techniques which aim to provide mental health support to persons experiencing mild-to-moderate distress and challenges accessing mental health services.

Type of global health reciprocal innovation: Randomised controlled trials of individual and group PM+ have been conducted in Kenya, Pakistan Nepal, Colombia and other settings. Based on the lessons learnt in Nepal, PM+ was adapted and is currently being implemented in community organisations in New York City.

What worked well? Members of the research team from the PM+ study in Nepal are also members of the RECOUP-NY research team which helped with adaptation to both contexts. The PM+ manual and materials were adapted using the mental health Cultural Adaptation and Contextualisation for Implementation procedure. A major improvement in adapting PM+ for New York involved making PM+ training and sessions more accessible by offering them both virtually and in person.

What did not work so well? Retaining existing staff members from community-based organisations in New York to complete PM+ training and provide ongoing PM+ services is a challenge due to time, capacity and possible conflict of interest barriers to fully engage in training and delivery of PM+ sessions. Supervision and referral systems are still a challenge to implement in high-income settings, particularly in organisations that do not offer mental health services.

Take away lessons: Locally meaningful outcomes to providers and clients are important for buy in and scaling up of interventions in specific contexts. Adaptation of training delivery methods and timetables are critical for the successful adoption of task sharing mental health interventions. Partnership with local government offices, such as the NYC Mayor's Office of Community Mental Health, is vital for identification of appropriate community partners.

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implementation in each new setting. Some cases also mentioned 'stakeholder consultation' or 'stakeholder feedback'. Adaptations for remote delivery of the intervention by telehealth or applications were also described. Many of the identified case examples used frameworks and designs from the field of implementation science (IS).

Involvement of people with lived experience

In many cases involvement of people with lived experience of the targeted condition was limited to including such persons in formative interviews or focus groups to inform the intervention. In a few instances, people with lived experience were involved in intervention delivery as developers, deliverers and/or evaluators of the intervention. For example, a few programmes integrally involved people living with HIV (three case examples) or people with lived experience with MH disorders and/or substance use (five case examples). In only a few examples (eg, Finding Respect and Ending Stigma around HIV and ENGAGE in table 1), people with lived experience were involved in every stage of the project.

experts, Integration, Training and Testing (ADAPT-ITT) model[26] or mental health Cultural Adaptation and Contextualisation for Implementation.[27] Others simply described using formative qualitative research to inform

Outcomes measured (and valued) in the different settings

Measured outcomes included: (1) mental health clinical outcomes; (2) HIV treatment and/or prevention outcomes; (3) stigma reduction (few); (4) implementation process outcomes; (5) feasibility and acceptability; (6) fidelity to the core intervention model; and (6) sustainability. Several cases measured psychosocial intermediate outcomes such as social support, parenting practices, relationship skills, family functioning, etc. Differences were observed in funder priorities (NIH, US President's Emergency Plan for AIDS Relief) for clinical HIV and/or MH outcomes versus locally relevant priorities for process outcomes like reduction in stigmatising communications or time to treat.

Funding sources and mechanisms

Sources of funding were varied, with many cases relying on a variety of piecemeal funding sources for different stages of the GHRI. NIH Institutes and Centers were common sources of funding (NIMH (National Institute of Mental Health), FIC (Fogarty International Center), National Institute of Allergy and Infectious Diseases, National Institute on Drug Abuse, Centers for AIDS Research). Other funding sources included university pilot grants, state and county governments in the USA and foundations/philanthropic sources. A few projects were funded under large multiproject grant mechanisms (P01, U19) that allowed for simultaneous implementation and/or more continuity in the work, facilitating GHRI.

Table 2 GHRI multilevel challenges and solutions

	Challenges in using GHRI approaches	Resources and skills needed
Community member/ client level	▶ Diverse subpopulations have different needs requiring unique adaptations, even within a single setting (no 'one size fits all'). ▶ Language barriers. ▶ Differing expectations for mental health services.	▶ Flexibility, openness, mutual respect and cultural humility in teams. ▶ Language and translation skills. ▶ Time and resources for careful thoughtful formative work to inform adaptation.
Provider/ organisation level	▶ High clinician and lay health worker workloads. ▶ Insufficient/incompatible health information systems in the two settings. ▶ Insufficient funds and organisational resources, including technology (ie, internet, work phones). ▶ Fragility of community-based organisations and facilities. ▶ Provider attrition. ▶ Many non-specialist providers have high exposure to the same adversities faced by clients.	▶ Flexibility in delivery settings (i.e., from healthcare facilities to community centres and vice versa). ▶ Remote delivery (telehealth, virtual supervision), and ensuring access to requisite technology. ▶ Appropriate training, preparation, compensation and supervision structures to deliver the intervention, including the creation of local supervision infrastructure to facilitate scale up. ▶ Sufficient funds and grant mechanisms for long-term projects in multiple sites. ▶ Robust self-care to support non-specialist providers to mitigate risk from secondary trauma and prevent burn-out.
Structural level	▶ Different structural factors affecting healthcare access and usage in each setting (ie, different degrees of poverty, community violence and/or stigma). ▶ Different healthcare systems and policy/legal regulations in each setting (ie, laws regulating who can deliver mental health services) led to challenges working with local health authorities. ▶ Changes in political leadership and political will over the life of the project in either setting. ▶ International travel restrictions, especially for visitors from LMICs to the USA.	▶ Ongoing data collection/analysis to tailor interventions to changing contexts. ▶ Legal/regulatory expertise in each setting for issues such as intellectual property or provider regulations. ▶ Allocation of travel funds for team members to visit collaborating sites and learn from one another.
Intervention level	▶ Validation of intervention modalities and tools in new settings takes time and resources. ▶ Need for fidelity monitoring and quality assurance for the implementation of evidence-based interventions.	▶ Sufficient clinical and research expertise to assess adapted versions of interventions and training content. ▶ Digitised provider-support tools can improve intervention fidelity and enhance clinical supervision and care using real-time data analytics.
Benefits of GHRI		

▶ Iterative feedback and learning.
▶ Sharing procedures, information systems and/or staff across multiple settings.
▶ Sharing complementary expertise (eg, mental health task sharing experience from one setting, community engagement experience from the other setting).
▶ Real-time dissemination of strategies, tools and materials in simultaneous projects.
▶ Providing remote delivery resources across settings can lead to wider than expected capacity building in under-resourced locations.

GHRI, global health reciprocal innovation; LMICs, low- and middle-income countries.

Barriers/challenges encountered in doing GHRI projects

Table 2 summarises common findings regarding GHRI implementation strategies, including benefits, challenges, special resources and skills needed to overcome challenges and lessons learnt.

Common challenges identified across multiple cases included: (1) differences in structural factors in the community and health facilities (poverty, different key populations) that made it difficult to deliver some aspects of the original intervention; (2) differing needs of target populations, including various levels of community stigma and fears of disclosure; (3) lack of similar and sufficient health information systems in both settings; (4) changes in political leadership and political will over the life of the project influencing implementation in both LMIC and HIC settings; (5) insufficient funds/organisational resources to carry out the full scope of the intervention including fidelity assessments and evaluations; (6) lack of availability of training materials/trainers in local languages; (7) different laws and regulations about who can deliver mental health services; (8) lack of similar access to technology, like mobile phones, internet, applications, in the different settings; (9) international travel restrictions, especially challenges for LMIC visitors to the USA; (10) busy overloaded non-specialists in one or both settings; (11) the need to rapidly adapt and create intervention materials in the new HIC setting (especially in the context of COVID-19) limiting the involvement of the LMIC team in the process; and (12) lack of models for cadres such as peer recovery specialists in LMIC and limitations on their professional scope of work in HIC.

Benefits of the GHRI collaboration

Common implementation benefits from GHRI collaboration included: (1) sharing proven tools developed in one setting across multiple settings; (2) iterative feedback and learning for improved implementation in each setting; (3) consistency in at least some team members across settings to help stay true to the core of the intervention; (4) ability to share data management systems in some cases; (5) benefitting from complementary expertise (eg, sharing mental health expertise from researchers in one setting with community engagement expertise from researchers in another); (6) efficiency and cost-savings if staff can be shared across settings (simultaneous designs); (7) real-time sharing of strategies and lessons (simultaneous designs); (8) learning from evaluation and demonstrated benefits for low-resource underserved populations in the previous setting (sequential design); and (9) creation and strengthening of new peer health worker roles. These benefits were perceived to lead to better programmes and benefits for the target populations.

Special resources needed for GHRI

Special resources needed for successful GHRI included: (1) language and translation skills; (2) cultural knowledge, sensitivity, mutual respect and humility across teams; (3) availability of appropriate cadres of interventionists

in each setting; (4) technology to facilitate communication and collaboration between country teams; (5) funds to support bidirectional travel of teams; (6) medico-legal expertise in each setting to deal with issues such as intellectual property or regulations around who can provide health services; (7) sufficient funds and grant mechanisms for projects that span more than one country; (8) sufficient clinical expertise to review the adapted versions of the training content; and (9) sufficient time, human resources and community participation to carefully consider the adaptations needed for each setting.

Unintended consequences (positive or negative)

One unintended positive consequence was wider than expected capacity building in the region/country adapting the intervention, especially when virtual resources developed during the project were made widely available to other organisations and providers in the country. One case reported greater than expected interest and support for the intervention in the US community when they learnt that it was developed in Kenya.[28] Another positive consequence was empowerment of peers and nonspecialist workers through increasing their responsibility and decision-making power in intervention delivery. Negative consequences include rising resistance and territorialism among some mental health professionals and professional societies in the USA.

Other lessons learnt

The need for flexibility, openness, mutual respect and cultural sensitivity was emphasised in several cases, as well as the need for true shared and meaningful partnership and leadership in the work. Other lessons included the need to use rigorous intervention adaptation models, share tools and materials across sites and to understand and document the standard of care in each setting (control condition). Many researchers emphasised the importance of taking into account the fragility of many CBOs and facilities, taking actions to fairly compensate and minimise burden on busy providers, considering the context of inequities in society and working with local interdisciplinary teams of mental health professionals and other disciplines. Some researchers emphasised that not only the intervention content, but also the measures and assessments used to evaluate the intervention, may have to be very different in the different settings.

CONCLUSION

Our review of these examples of GHRI around mental health and well-being—including HIV-related stigma reduction examples—has revealed an emerging body of work that has the potential to benefit diverse populations in both LMIC and HIC. The examples of GHRI analysed in this review highlight the implementation benefits of a bidirectional, iterative process and the importance of communication and collaboration among project teams in different settings. This work also presents an opportunity to reflect

on colonial legacies in global mental health research and to strive for more balance and partnership.[29 30]

In many cases the transfer of an intervention from one setting to another was not envisioned in the initial project; many such transfers were stimulated the COVID-19 pandemic, which increased the need for widely accessible mental health interventions within the USA.[31] In these examples of GHRI 'sequential designs', we observed fewer opportunities for the LMIC and HIC teams to interact and learn from one another, as compared with 'simultaneous designs' when the different settings intentionally began the GHRI together around the same time. The fact that most examples did not have an a priori focus on GHRI probably reflects the lack of comprehensive targeted funding mechanisms to support long-term multinational interactive, iterative work in the field of mental health and well-being. In the few examples of true 'simultaneous designs', mechanisms for interaction, shared leadership and multidirectional learning could be built in from the beginning and continue over time, yielding immense benefits. As such programmes require larger budgets over a multiyear time horizon and require the availability of funds for international travel, we advocate for future funding opportunities specifically tailored for GHRI that can help the global community to continue this work that has high potential to improve mental health and well-being globally.

Many of our case examples emphasised task-sharing and intervention delivery by health workers who are not mental health specialists, including primary care and community health workers and other non-specialist providers such as peer coaches, peer facilitators, religious leaders and non-health staff of CBOs. This approach, which has been a necessity for years in LMIC,[32] is now being adopted in many high-income settings to address shortages of formally trained mental health and psychosocial support staff and increased mental healthcare need, especially in lower-resource areas.[33] Across multiple task-sharing cases, technology served as an important facilitator to training non-specialists, ensuring fidelity of intervention delivery and expanding reach to under-resourced populations. Our examples also revealed some of the challenges with task-sharing approaches, including already overburdened health workers, shortages of experts for effective supervision and different country regulations about what cadre of workers can deliver certain types of healthcare.

Culturally and contextually relevant adaptation is paramount to successful GHRI. On one hand, inclusion of the intervention developers and/or implementors from the prior setting(s) on the team in the new setting in a meaningful collaboration can ensure that the core components necessary for the effectiveness of the intervention are not lost in translation. On the other hand, interventions themselves may need to change in major ways to effectively respond to the needs of new target populations and new contexts. To navigate this balance, careful and rigorous usage of theories, methods and frameworks from IS can be particularly useful to adapt and scale up interventions in new contexts once they have been shown to be effective in one setting. By encouraging communication between stakeholders across multiple settings, GHRI approaches fit well within IS to improve the process of implementation, to enhance equity and shared leadership and to work towards the decolonisation of global health.[34]

We consider reducing stigma as an important part of promoting mental health and well-being related to a variety of health conditions and identified many examples of GHRI in HIV-related stigma reduction. Many mental health interventions we examined involved reducing the stigma around mental health disorders and seeking mental health treatment, although stigma was not usually measured in these cases and effects of these interventions on mental illness-related stigma are largely underexplored. Future work should assess and carefully consider both anticipated and unanticipated effects of interventions on stigma in the community.

Our analysis had both limitations and strengths. Limitations include that our analysis was not a systematic review of the literature, and that the HIC implementation examples were limited to the USA. We also acknowledge that some of the case examples included in this analysis were based on projects conducted by members of our authorship team (seven of the case examples), and while that brought a strength in terms of in-depth knowledge project, it could also be considered a source of bias. We partly mitigate this by the joint authorship of multiple authors and the reflexive discussions among the author-team. Strengths include the synthesis of key findings from LMIC and US researchers who have been intimately involved in projects involving GHRI, as well as the timely sharing of insights in a relatively new and actively developing field of work.

The current analysis suggests that there are important research questions to be addressed to further understand the processes and outcomes of GHRI in mental health and well-being. These include research to: (1) document processes and identify best practices for co-led LMIC-HIC teams for GHRI projects, (2) test the effects of different cultural and contextual adaptation frameworks on implementation and effectiveness outcomes, (3) compare the implementation strategies and outcomes of specific mental health and well-being interventions in different settings globally and (4) examine how mental health interventions impact community-level and healthcare setting stigma around mental illness and other stigmatised identities in different global settings.

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