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Reverse Innovation in Mental Health: Review and Recommendations

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Abstract

The global health community has strived to attain equitable partnerships in global mental health. To this end, there has been a growing interest in Reverse Innovation. This is defined as the development of an initiative in a Low- or Middle-Income Country setting that is then adopted by a Western counterpart or High-Income Country setting. While often referenced in other branches of medicine, Reverse Innovation remains especially underexplored in mental health care. This paper presents a commentary and literature review examining the status quo on Reverse Innovation in mental health. Barriers to knowledge exchange between Low- and Middle-Income, and High-Income country partners are discussed, and potential solutions are presented.

Introduction

Mental illness was once perceived as a "first-world" problem, however it has become clear that mental illness is a pervasive issue globally. According to the Global Burden of Disease (GBD) study, mental health disorders (1,619.3 YLDs per 100,000) are the second highest contributor to Years Lived with Disability (YLDs), among all other diseases (Institute for Health Metrics and Evaluation, 2020). Furthermore, there is a disparate need for mental health care in Low- and Middle-Income Countries (LMICs) (Ferrari et al., 2013; Patel et al., 2016). For example, countries in South America, Africa and Southeast Asia face morbidity burden due to depressive illnesses that are nearly twice as high as their counterparts in North America and Western Europe (Patel et al., 2016). This burden of disease is compounded by an inadequate number of mental health providers in both High-Income Countries (HICs) and LMICs leading to a treatment gap (Bruckner et al., 2011).

The field of global mental health needs to elicit truly global knowledge generation in order to address the treatment gap for both HICs and LMICs. This aligns with the concept of Reverse Innovation (RI) in health care (Govindarajan & Trimble, 2012; Syed, Dadwal, & Martin, 2013). Reverse Innovation refers to diffusion of solutions from LMICs to High-Income settings. In other parts of medicine, RI has had a significant impact. One landmark example is the adaptation of the antimalarial drug artemisinin, which originated in China (Maude, Woodrow, & White, 2010). Another example is General Electric's development of the electrocardiogram (EKG) with partners in India, which is widely used in HICs and LMICs alike (Immelt, Govindarajan, & Trimble, 2009). However, the role of RI in mental health remains underexplored (McKenzie, Patel, & Araya, 2004).

Only scant examples exist in the literature that constitute true reverse innovation in mental health. We describe one example below, which used a task-shifting intervention that mobilized a novel set of members of the community - grandmothers. The intervention was developed in an LMIC setting, and had Reverse Innovation or implementation demonstrated in a HIC. This example from the literature demonstrates the importance of knowledge exchange, it is innovative, scalable and easily implemented in other settings given the universal nature of key actors, elderly figures in the community.

"The Friendship Bench: a South-North knowledge and experience transfer"

The Friendship Bench is a culturally adapted individual psychotherapy intervention delivered by elderly female lay health workers (called "grandmothers") at primary care clinics in Zimbabwe (Chibanda et al., 2016). The intervention was developed to circumvent limited access to mental health care providers in this setting. Patients presenting to primary care clinics for mental health services are referred to meet with a grandmother from the local community. This one-on-one interaction takes place on a bench on the clinic premises. Grandmothers were uniquely positioned to deliver the intervention because they are well-respected in Zimbabwe and had skills that were valued and could further be developed including empathetic listening and patience. As a result, patients are often more willing to discuss their distress with them than their doctors. As with many task-shifting interventions, grandmothers had minimal prior mental health training, but were trained in manualized problem-solving therapy with ongoing supervision from a mental health professional.

Grandmothers also debrief with each other for peer learning and support. In a recent clustered- randomized controlled trial, the intervention successfully decreased depressive symptoms and anxiety and improved functioning for the interventional group compared to enhanced care as usual (Chibanda et al., 2016).

Currently, the intervention is being disseminated in the United States (Fleck, 2018) where task- shifting to trusted individuals in the community could help close the treatment gap for nearly 50% of individuals with mental illness who do not receive treatment (Wang et al., 2005). Under the purview of the New York City Department of Health and Mental Hygiene, The Friendship Benches NYC uses minimally trained volunteers who often have lived experience to deliver problem-solving therapy to hard-to-reach populations in New York City (Friendship Bench Zimbabwe, 2018). Similar to the original intervention, these lay health workers meet clients on benches. However, to promote outreach, some benches are mobile and can be transported to areas of need and public events. Also, lay health workers in New York City vary in age (between 26-54 years old). Within a few months of its inception in July 2017, over 2000 individuals received support through the program.

While the example of the Friendship Bench summarized is encouraging, the dearth of interventions demonstrating Reverse Innovation in the literature is alarming. Some of the lack of representation in the literature could also be due to publication bias. All in all, interventions or components of interventions developed and implemented successfully outside of the Western setting could be of utility in improving practice of mental health elsewhere. However, the challenge in incorporating these practices seems to remain elusive. We propose a number of solutions to the continued dilemma.

Addressing the Reverse Innovation lag
Rebalancing partnerships in the global context

As defined by the United Nations, the terms "Global North" and "Global South" have been used "to refer to the social, economic and political differences that exist" between predominantly HICs in the North and LMICs in the South. "It should be noted that the division is not totally faithful to the actual geographical division." Traditionally, North-South collaborations, have dominated global health partnerships where the movement of resources occurs from the North to the South (United Nations, 2020). However, in targeting global health issues over the last decade, a shift to a greater focus on South-North and South-South exchanges of knowledge has

occurred, which has displaced the notion of a paternalistic Northern framework for global public health practice (World Bank, 2020; World Health Organization, 2021). This move is highlighted in the Global Mental Health movement which was founded as a result of the seminal Lancet 2007 series on the topic, and in response to a 2001 call by the World Health Organization (Horton, 2007; Saraceno et al., 2007). The mission of the movement is to improve health services for mental illness in LMICs where access to care remains a disproportionate problem (Institute for Health Metrics and Evaluation, 2020).

The perpetuation of colonialist tendencies in international research, coined "neo-colonialism" or "semi-colonial" is one argument for the hampered success in achieving partnership goals. For example, partners from the Global South may be directed towards fieldwork, but have sparse involvement in project innovation or leadership components such as leading paper authorship (Feierman, Kleinman, Stewart, Farmer, & Das, 2010; Godoy-Ruiz, Cole, Lenters, & McKenzie, 2016). This confers little opportunity for the autonomy of these partners. Overcoming this barrier not only requires abolishing these constructs that are entrenched in our practices for global health, but replacing them with new ones.

The leadership of the Consortium of Universities for Global Health, one of the leading global health organizations, has laid out an ideal framework for change to occur. CUGH challenges the conventional idea of global health, which places ownership or leadership on either partner and instead endorses relying on "interconnectedness" as the way forward (Koplan et al., 2009). Lord Nigel Crisp in his seminal book, "Turning the world upside down: the search for global health in the 21st century," also highlights this "inter-dependedness"(Crisp, 2010). Finally, the World Health Organization has advocated for the importance of South-South exchange of knowledge which includes the move away from a donor-recipient model (World Health Organization, 2021).

The international partner as lead innovator

Unique practices that have persisted among these cultures could be incorporated into Western societies causing a constructive transformation and dismantling of established frameworks. The need for this is driven by the limited ability of already strained healthcare systems in LMIC settings to assume mental health care, which requires creative delivery approaches (Wilson & Somhlaba, 2017). An example of a novel care delivery model developed in the LMIC setting is exemplified by the case study presented earlier in the paper, The Friendship Bench. Similarly, the proliferation of peer support groups in LMICs can also inform established practices in HICs. To this end, the UPSIDES (Using Peer Support in Developing Empowering Mental Health Services) initiative (Hiltensperger R et al., 2018) aims to foster North-South learning by exploring best practices of peer support for individuals with serious mental illness in LMICs and HICs settings. Novel methods for delivering interventions and diagnostic tools that take into account cultural complexities may be useful in ensuring individuals with mental health symptoms are properly diagnosed and cared for.

Consensus statements and guidelines for global mental health practitioners

It has been suggested that the role of the international partner has been poorly established because of a lack of evidence for best practices on how to approach such equitable setups (Crane, 2010; Smith et al., 2009). The development of clear consensus statements and guidelines for the practice of international research collaborations by key stakeholders is one potential solution. At the helm of this effort should be international

governing bodies like World Health Organization and development agencies with large footprints in these settings. Additionally, leading scientific bodies could set basic minimum standards for their members to adhere to when conducting studies with LMIC partners.
Finally, academic institutions and research institutes could be purveyors of these guidelines, and they could be further enforced by funding bodies and other research governing entities. One such example to emulate by Morrison and colleagues' work, which proposes a model of ethical relationships for North- South partnerships identifying all key parties affected, including incorporation of legal advisors in establishing international partnerships (Morrison, Tomsons, Gomez, & Forde, 2018).

Reevaluating cultural dissonance in approaches to care along with the consideration of guidelines that govern research practices, it is important to reevaluate clinical approaches as well. The idea that the same framework that has governed practices in the West need be transferred, like a stencil or cookie-cutter, in order to study or implement in Southern nations is short sighted. The imperfect definitions of "pathology" as defined by well-established international guidelines such as the Diagnostic and Statistical Manual of Mental Disorders (DSM) and National Institute for Health and Care Excellence (NICE) guidelines (American Psychiatric Association, 2013; National Institute for Health and Care Excellence (NICE)) are important to note, as their implementation in foreign settings may be severely undermining efforts to affect improved "well-being".

These tools may lack the bandwidth to adequately address the spectrum of illness seen in the international setting. And what appears as pathologic behavior as understood by Western patterns, may in fact be culturally acceptable coping mechanisms in these societies. Additionally, disease processes may present very subtly, particularly given profound stigma in these cultures (Chan, Hung, & Yip, 2001), or differently as a result of local idioms of distress (Adeponle, Groleau, & Kirmayer, 2015; Ryder, Sunohara, & Kirmayer, 2015). This in turn is likely to affect health-seeking behaviors and to contribute to under-diagnosis by providers. Finally, the natural progression of disease as seen in Western constituents may differ from those seen elsewhere (Hopper & Wanderling, 2000). Jordan and colleagues successfully used novel visual aid tools for mental health screening and diagnosis in Nepal (Jordans, Kohrt, Luitel, Komproe, & Lund, 2015). In the United States, where depression is underdiagnosed in certain groups such as the elderly or African American patients due to lower screening rates and more somatic symptoms (Akincigil & Matthews, 2017), this approach may have some merit.

For treatment, Indian psychosocial rehabilitation models for patients with mental illness have led to improved disease course (Stanhope, 2002). These models are based on the role of social networks surrounding patients. Foremost is the family, whose involvement and low level of criticism can promote recovery. Furthermore, a more interdependent mindset and an external locus of control consistent with the religious belief "Karma" foster more acceptance and role supports for the afflicted within their family and the wider society. Although promising, whether these social network elements can incorporate into care in Western countries with more individualistic values, remains to be seen.

Innovative and unconventional research approaches are needed

Unconventional approaches to data collection are key in order to drive innovative intervention development. For example, traditional healers have proved to be

invaluable sources of data through case studies and ethnographies on their practices (Adeponle et al., 2015; Poltorak, 2016; Ryder et al., 2015). While case studies and ethnographies are less commonly employed research methods, they have significant potential to identify nuanced cultural practices that are imperative to guiding care. Through these and other approaches, we could engage and learn from mental health care in these unique settings (Stanhope, 2002), but this will take patience and flexibility on all sides (Morrison et al., 2018; Ofori-Atta, Read, & Lund, 2010).

In another example described by Poltorak et al, a Western practitioner who practiced in Tonga understood the necessity of first defining what healing meant to this community. As part of this process, he first sought to establish context-specific terminology referring to mental health concerns, and designed communication strategies based on this. He also developed new definitions of disease in close collaboration with traditional healers (Poltorak, 2016). As demonstrated in this case, an appreciation and incorporation of local religious and community practices can be beneficial (Petersen, Baillie, Bhana, Health, & Consortium, 2012).

Treatment can be guided by the international partner, and concepts elucidated where the target population in the LMIC setting is used to develop ideas and concepts, rather than parachuting in with preconceived notions and approaches. Through this strategy, we will be able to engage with and transform mental health care for this community as well as learn for our own communities in the West.

Publication and global dissemination through easily accessible channels

In parallel, building of research capacity and dissemination of findings should continue to be prioritized as much as possible (Thornicroft et al, 2012; Vasquez et al, 2013; Wilson & Somhlaba, 2017). The 2013 development of the Mental Health Innovation Network provides some gains in addressing dissemination by acting as a database of international interventions in mental health (Mental Health Innovation Network, 2021). While efforts demonstrated through this initiative are laudable, further consolidation and dissemination of innovations is needed, and particularly from underrepresented settings. A predominance of Northern leading partners is evident in the limited research originating from international partners, including in our own literature review where Northern partners predominated as lead actors in developing interventions. Flow of information from and to LMIC stakeholders is limited by access to online platforms. Growth and dissemination through alternative modalities will be critical in continuing to highlight novel ideas from the developing setting.

Conclusion

The cost of mental health care, lack of providers, and low investment in mental health care all make it important to look for innovative solutions to deliver mental health care laterally, across countries and regions. If we truly want to improve mental health for all, we need to disrupt the deep- rooted tendency of knowledge flow from HICs to LMICs and look for solutions in all places. There is an extraordinary opportunity to incorporate innovative practices from across the world. However, as demonstrated in this review, Reverse Innovation from LMICs to HICs in mental health is rare.
Reverse Innovation in mental health will require more collaborations across regions to ensure that progress and knowledge is shared. To achieve this goal, partners in LMICs should be prioritized as stakeholders in setting the global mental health agenda, developing policy, and implementing interventions. Through these efforts, the

promise of Reverse Innovation in global mental health can be actualized.

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