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BRIEF REPORT: PREVENTING LATE-LIFE DEPRESSION IN LOW – AND MIDDLE – INCOME COUNTRIES (LMICS)

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Abstract: As the number of older adults in low- and middle- income (LMIC) countries is expected to grow substantially over the next several decades, it is important to develop programs for the prevention of major depression in later life. These programs should be flexible enough to be adjusted to the needs of poorly resourced LMICs. The current report provides an overview of a "depression in later life" (DIL) study in Goa, India, as a promising and effective mental health prevention program, with the potential for implementation in other LMICs. DIL study uses unspecialized physicians and lay health counselors (LHCs) to deliver both scalable psychological intervention and low-intensity intervention, consistent with Institute of Medicine's (IOM, 1994) indicated prevention approach. DIL intervention led to reduced incidence of Major Depressive Disorder in DIL-randomized participants and as such it is important in meeting the 2016-2030 United Nations Sustainable Development Goal of "Ensuring healthy lives and promoting the well-being for all at all ages."

Keywords: Depression, Psychogeriatrics, Developing country, Primary care, Geriatrics

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Introduction

Globally, depression is the most common mental health disorder. According to the Global Burden of Disease (GDS) study (GDS, 2015), there are currently 322 million people around the world living with depression. Nearly one third of individuals living with depression live in Southeast Asia. India has the highest rate of depressive disorders in Southeast Asia, with over 56 million reported cases, or 4.5% of India's total population. Reynolds et al. (2018) examines strategies for the prevention of depression in older adults, also referred to as "depression in later life" or DIL, among older adults living in Goa, India. In this way, DIL serves as an example of what the Institute of Medicine (IOM, 1994) termed an "indicated prevention." Indicated prevention focuses on patients with subsyndromal or mild symptoms of depression who are thereby at risk of for transitioning to a major clinical depression. It is a form of early intervention, or treatment and management of mild symptoms, with a goal of reducing symptoms, improving quality of life, and preventing onset of Major Depressive Disorder (MDD).

DIL Feasibility Study

Reynolds et al.'s study (2018) consisted of assessing the impact of two interventions, Problem Solving Therapy for Primary Care (PST – PC) and Brief Behavioral Treatment for Insomnia (BBTI), on preventing both incident and recurrent episodes of MDD later in life. In addition to these interventions, participants also received two additional components: education in symptoms of anxiety, depression, and chronic disease self-management, and were provided with case worker assistance to navigate social and economic resources. Given the dearth of human resources for mental health in India and lack of specialized personnel a key feature of the DIL intervention is that it is delivered by non-specialist physicians and lay health counselors (LHCs) in a non-health care or primary care setting. Combination of PST-PC and BBTI were delivered over 5-8 sessions, each approximately 30 minutes in length, by non-specialist physicians and four LHCs. It is argued that behavioral activation is intertwined through all four components and as such it integrates them into one whole (Reynolds et al., 2018). It is important to acknowledge the substantial body of work in western mental health and clinical literature relating to low - intensity preventative and treatment programmes and stepped – care paradigms (e.g., Williams, &

Martinez, 2008; Williams et al., 2013) which informed the DIL study.
Four (4) LHCs were trained on site by an on-site psychologist and via teleconference call by a geropsychologist at the University of Pittsburgh over the course of 4 weeks in workshops on problem solving therapy and brief behavioral therapy for insomnia, and they each treated two pilot subjects to ensure adherence to protocol (C. Reynolds, personal communication, August 13, 2018). In addition, each LHC had booster training sessions at 7 months and at 10 months, to encourage practice and learning within the framework of behavioral activation.

The DIL intervention included a sample size of 21 participants in DIL's formative pilot study and enrolled 181 participants into a randomized indicated prevention trial. Participants were aged 60 years or older and met criteria for subsyndromal symptoms of depression and anxiety as indicated by a score of 4 or greater on the General Health Questionnaire (GHQ).
The study participants ranged in age from 60 to 85 with an average age of 69.64. While it was difficult to capture specific Socioeconomic Status (SES) demographic characteristics of participants, it was noted that most of the participants had very limited formal education and many were illiterate. During the formative phase of the DIL intervention, in order to better engage participants with limited or no literacy, pictorial flip charts, with large images for elders to relate to and understand, were introduced (Dias et al., 2017). Examples of illustrative teaching tools included figures such as "Upward Spiral," "Mood Rating Scale," and Early Warning Signs of Diabetes" (Reynolds et al. 2018).

The study used both Global Health Questionnaire (GHQ-12) and the Hindi version of Mini-Mental State Examination (MMSE), both of which were validated for international use and used in previous trials in Goa (i.e., Singla et al., 2014; Smit et al., 2006). The GHQ-12 assesses for anxiety and depression, where scores of 4 or greater indicate presence of anxiety and depression. DIL participants' baseline mean score of 5.3 on GHQ-12 was statistically significantly reduced, 6 to 8 weeks later, to 3.3 score on the postintervention GHQ-12 ($p < .05$) (Reynolds et al., 2018). No significant changes occurred in the MMSE scores.

Does DIL Work?

Overall, the DIL Feasibility Study resulted in high levels of retention, with participants qualitatively endorsing sessions as "enjoyable" (Reynolds, et al., 2018). Phase II of the DIL study demonstrated acceptable recruitment feasibility with fewer than 20% of 181 participants refusing randomization. The Pilot Feasibility Study found that DIL intervention is successful. Further, Phase II of DIL showed that there has been reduced incidence of MDD episode in DIL-randomized participants relative to care as usual (CAU). DIL prevented onset of MDD episodes to a greater extent that did care as usual (CAU).

DIL is a novel approach to depression prevention in a low-resource country. It is a novel approach in a sense that it is the first implementation of a depression *indicated prevention* strategy by LHCs in LMIC countries with older adults. While the components of the intervention are not novel in and of themselves, they were modified to meet unique needs and the context of Goa, India.

The DIL was comprised of the following three components:

- The main theoretical framework was provided by Problem-Solving Therapy (PST)

- Participants were provided with help in navigating available resources through social casework.

- Participants were provided with education on self-management of common medical illnesses such as diabetes, hypertension and painful osteoarthritis (Dias et al., 2017).

Over the course of one year participants were provided with 6 to 7 hours of face to face time with the LHC who used Problem-Solving Therapy (PST) consisting of the following key components: identifying the problem; noting down a realistic achievable goal; searching for possible solutions; probing through the pros and cons of each solution; identifying a preferred solution(s); run with it (action plan); evaluating the outcome (Dias et al., 2017).
To help with concerns on finances, food and personal care participants were provided with social casework which provided them with information on social resources for senior citizens by the Government of Goa.
Finally, to address the most commonly reported source of anxiety, the bur-

den of chronic disease, participants were provided with education on and self-management of most common chronic diseases such as diabetes, hypertension, and painful osteoporosis. This education was delivered by the lay health counselors who were provided with training on the topic. Specifically, the LHCs were trained to educate participants on the nature of these diseases and basic non pharmaceutical self-management (Dias et al., 2017). In addition to the above listed components of the study, the LHCs provided participants with basic sleep hygiene information and educated them on monitoring their wake and sleep patterns, strategies from Brief Behavioral Therapy for Insomnia (BBTI) shown to reduce anxiety and depressive symptoms and to improve the quality of sleep.

Conclusions

Key aspects of DIL's translational impact include:

- A novel approach to the prevention of and intervention in mental health disorders in LMICs.
- The utilization of LHCs in primary care and non-healthcare settings as a prevention strategy.
- The use of an integrated approach encompassing education, and brief behavioral and problem-solving treatments.

It is anticipated (Reynolds, et al., 2018) that the DIL study will translate to the prevention of common mental health disorders in later life in LMICs. This will benefit many LMIC countries with limited resources and with professional staff shortages, as trained LHCs can provide basic educational and brief behavioral interventions, as well as serve as problem-solving facilitators for patients' financial and social needs. The DIL study demonstrated that depression is preventable in older at-risk adults in LMICs. Another implication for policy is evidence that lay health counsellors can effectively and safely deliver a simple behavioral activation grounded in problem solving therapy to prevent major depression in older adults living with mild, subsyndromal symptoms.

The evidence from the DIL study suggests that policy responses should direct resources to the following:

- The development of indicated prevention strategies.
- The development of lay helper LHC network as a cost-effective, community-based, culturally - informed and scalable approach for health interventions (e.g., Patel et al., 2010).
- Building the workforce capability and skills of the lay health counsellor LHC workforce.
- Health system strategy reform to develop an agile and capable workforce that integrates the formal (specialist) and informal (e.g. LHC) sectors.

In sum, DIL is likely to have implications for the prevention of depression in older adults in other low- and middle - income (LMIC) countries. The DIL model is expected to be scalable, at affordable cost, in LMICs. The prevention of major depression in later life is especially important in LMICs because the total number of older adults is expected to grow substantially in the next several decades.

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