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## From impact factors to real impact: translating evidence on lifestyle interventions into routine mental health care

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### Abstract

The scandal of premature mortality in people with serious mental illness is well established. Despite an increase in studies evaluating the efficacy of lifestyle interventions, translating this evidence into routine clinical care and policies is challenging, in part due to limited effectiveness or implementation research. We highlight the challenge of implementation that is increasingly recognized in clinical practice, advocate for adopting implementation science to study the implementation and systematic update of effective interventions in practice and policy, and provide directions for future research.

### Keywords

Lifestyle, Severe mental illness, Implementation, Schizophrenia, Physical activity

People with severe mental illness (SMI) experience a reduced life expectancy up to 20 years compared to the general population, predominantly due to poor physical health [1–5]. Modifiable cardiometabolic risk factors, such as physical inactivity, a sedentary lifestyle, smoking, and dietary risks, contribute significantly to these negative health outcomes [6–10]. Interventions that address these risk factors are increasingly recognized as important components of treatment for this vulnerable population. For example, many systematic reviews and meta-analyses have demonstrated the efficacy of physical activity interventions on cardiometabolic health, psychiatric symptoms, quality of life, and global and cognitive functioning in people with SMI [11–17], with the most efficacious interventions executed at sufficient levels of intensity and delivered by qualified exercise professionals (e.g. exercise physiologists and physiotherapists) [16,17].

In 2016, the Society of Behavioral Medicine (SBM), together with the American College of Sports Medicine (ACSM), called for the expansion of the U.S. health plan coverage for exercise programming for people with SMI [18]. This was in response to the limited availability of such programs in routine care in contrast to the considerable evidence demonstrating the efficacy of “lifestyle interventions,” that is, programs which aim to promote

### Implications

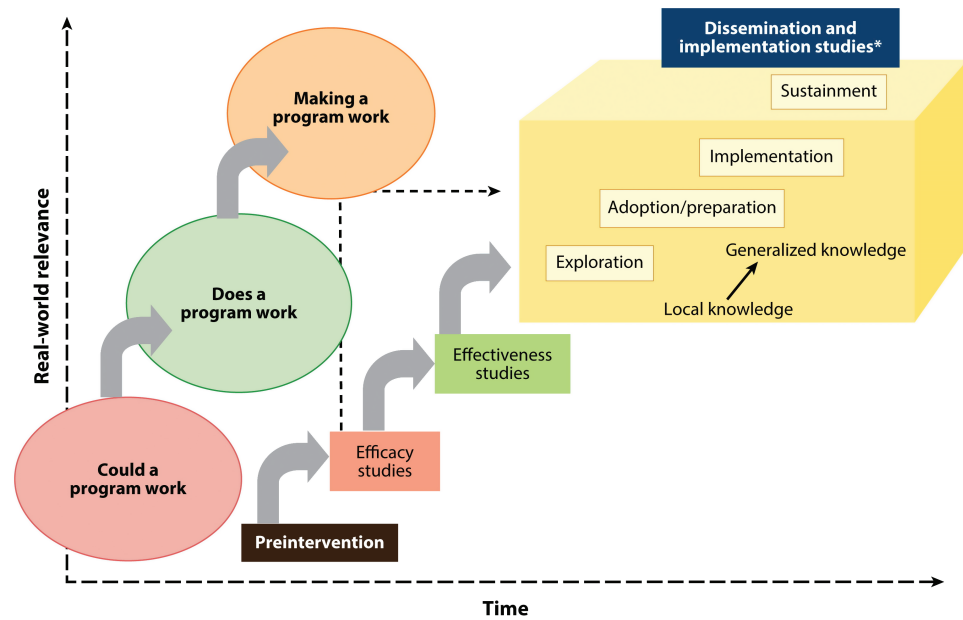
**Practice:** Implementation research can help expedite the translation of findings from randomized controlled trials (RCTs) into routine clinical practice.

**Policy:** Policies regarding the physical health of people with severe mental illness need to be informed not only by RCT evidence but also implementation research to guide the design and delivery of effective interventions in real-world conditions.

**Research:** In addition to a call for more effectiveness studies conducted in real-world settings, concurrently studying the implementation and systematic uptake of effective interventions in practice and policy is an essential step to translate effective lifestyle interventions into routine mental health care.

an active and healthy lifestyle. The gap between this increase in evidence and policies aiming to address the reduced life expectancy of people with SMI and changes in routine care was stressed in several editorials as well, calling for action [19–23]. The overwhelming majority of evidence to date has focused on the efficacy of lifestyle interventions, using randomized controlled trials (RCTs) to answer the question “does it work?” [24]. While essential, such studies have limited external validity, frequently involving individuals who are already looking to change their health behaviors and who are often less severely unwell [20]. Further, efficacy studies are typically performed under ideal conditions, which are unlikely to reflect typical resourcing of interventions under real-world conditions. Therefore, positive findings from RCTs cannot automatically translate into routine clinical care.

Thus, if efficacy is shown, studies evaluating the effectiveness of interventions in real-world settings can help to understand how to “make a program work”



\*These dissemination and implementation stages include systematic monitoring, evaluation, and adaptation as required.

**Fig 1** | The traditional translational pipeline from preintervention, efficacy, effectiveness to dissemination and implementation studies. Adapted from Brown et al. [24].

in routine clinical practice, as outlined in the model of Brown et al. [24] (Fig. 1). Such studies will help answer the question as to how patients with SMI can include lifestyle changes in their daily lives in real-world settings [25–27], which is also relevant in light of the limited evidence regarding the maintenance and long-term health benefits of lifestyle interventions [16,27,28].

Implementing and then sustaining (i.e., integration within an organization) evidence-based interventions within routine clinical care is a complex process. Specific characteristics of real-world clinical settings and multilevel barriers for successful implementation are two key challenges in this [29,30]. In this context, knowledge on factors at the individual level (e.g., patients and health care professionals) [31–35] and using co-design principles with adequate representation from and consultation with those individuals is vitally important [36,37]. This could contribute to a more tailored approach, improving the meaningfulness and suitability for both patients and health care professionals and thereby their autonomous motivation, which was suggested to enhance sustainable engagement [38–41]. However, environmental (e.g., community/system and policy influences) and organizational level factors (i.e., ensuring adequate resourcing, organizational culture) also are crucial, although less frequently studied [18,25,29,30,42]. Regarding resourcing, this may also include involving and upskilling existing workforce as it is not always possible to attract and retain lifestyle-oriented health care professionals, for example, in more rural and remote geographic regions [43].

A better understanding of implementation-related factors can reveal why interventions may or may not work in a “real-world” context and how they can be sustained over the longer term, which would support efforts to embed these services in routine clinical practice. Such factors are relevant for health care professionals and people living with SMI. This also applies to policymakers and other key stakeholders, to ensure the long-term impact of investments in lifestyle interventions and deinvestment in interventions with limited evidence base or proven efficacy [30,44,45].

Implementation science, that is, studying methods to promote the systematic uptake of evidence-based interventions into practice and policy, is designed to address such difficulties. In addition to more effectiveness studies, we advocate for more implementation research to further close the gap between research and practice in lifestyle interventions for people with SMI. Such studies should assess measures of acceptability, adoption, fidelity, implementation costs, and sustainability in addition to clinical markers [46] (Fig. 1). A practical guide to support this type of research is PRACTical planning for Implementation and Scale-up (PRACTIS). PRACTIS was introduced as a step-by-step approach to implementing physical activity interventions in both inpatient and community real-world settings and can be applied to other areas of public health prevention [29]. It describes four iterative steps. The first step focuses on the characterization of the parameters of the implementation setting, such as the size of the target population, how implementers will be engaged, trained, and supported, and the identification of champions. It also

includes how associated costs and resources will be sustainably funded and alignment with and integration into organizational missions, policies, and job descriptions. The second step includes identifying and engaging key stakeholders across multiple levels within the implementation setting. The third and fourth step focus on the identification of contextual barriers and facilitators to implementation and addressing potential barriers. PRACTIS supports implementation efforts by outlining “a structure for researchers and stakeholders, with varying levels of implementation experience and expertise, to navigate the complex considerations and decision-making processes involved in translating evidence-based interventions into practice” [29]. It should be recognized that these steps are not a fixed linear process as uncertainty and unpredictability (e.g., organizational changes) are inherent to real-world settings [47]. Although effectiveness and implementation studies are typically considered to be separate research designs, they can be combined to expedite the translation of research findings into routine practice [48]. Studying the implementation of lifestyle interventions includes evaluation of costs and adverse events as well, which are crucial in the context of sustainable implementation [16,17]. Furthermore, there is a need for support implementation research through appropriate funding schemes as well as encouraging and promoting the publication of implementation-based findings in addition to efficacy studies from traditional RCTs. In addition to a call for more effectiveness studies conducted in real-world settings, concurrently studying the implementation and systematic uptake of effective interventions in practice and policy is an essential step to drive this field forward. We should ensure that the implementation of such interventions does not become the “elephant in the room.” The challenge of implementation is widely recognized and we need more than efficacy studies to address this. It is time to focus on how we can implement and deliver interventions in routine clinical practice in order to achieve long-term change and improve the health status of people with SMI.

#### Compliance with Ethical Standards

**Conflicts of Interest:** All authors declare that they have no conflicts of interest.

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