Implementing lifestyle interventions in mental health care: third report of the *Lancet Psychiatry* Physical Health Commission

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Executive summary

Background

The physical health disparities experienced by people who live with mental illness are well documented. This population group has cardiometabolic risks and diseases at rates 1·4–2·0 times higher than people without mental illness, and physical health conditions are responsible for 70% of the deaths of people with severe mental illness. They are the major drivers of the 13–15 year reduction in life expectancy that is found in individuals with mental illness, compared with those without mental illness. The 2019 *The* Lancet Psychiatry *Commission: a blueprint for protecting physical health in people with mental illness* brought these disparities into focus and provided guidance for health promotion, multiprofessional clinical care, and future research. Lifestyle risk factors, such as high smoking rates, low physical activity, high levels of sedentary behaviour, low cardiorespiratory fitness, lower diet quality, detrimental eating behaviour, and poor sleep hygiene, are prevalent in this population. Lifestyle interventions that target these risk factors are effective adjunctive therapies in people living with mental illness, alleviating mental health symptoms while protecting physical health and promoting wellbeing. Given the established benefits of lifestyle interventions in mental health settings, there is a need to shift the focus from efficacy towards implementation research and address how best to implement and deliver lifestyle interventions as core clinical practice. Implementation should include a recognition of the social and economic context in which behavioural risk factors emerge to ensure equity of outcomes.

This Commission report provides an in-depth examination of lifestyle interventions that can prevent and manage mental health conditions and multimorbidity. It focuses on four key modifiable lifestyle pillars that are considered fundamental to lifestyle medicine—physical activity, nutrition, smoking cessation, and sleep—and that have been a focus of lifestyle interventions in mental health care.

This Commission report explores what makes lifestyle interventions effective, and how to implement and deliver them in the context of mental health care. It aims to provide evidence-based recommendations that address the existing evidence–implementation gap for people with mental disorders, such as schizophrenia spectrum, affective, anxiety, and stress-related disorders. However, some anthropometric and lifestyle messages within this Commission report might be inappropriate or even harmful to those who live with eating disorders.

Part 1: What was the effect of the 2019 *Lancet Psychiatry* Commission on the field of lifestyle interventions in mental health care?

We analysed policy documents and journal articles related to lifestyle that cited the 2019 *Lancet Psychiatry* Commission. As of March, 2024, the 2019 *Lancet Psychiatry* Commission had been cited in 17 policy documents, consensus or position statements, and guidelines; and 319 journal articles that discussed lifestyle interventions. These articles predominantly focused on physical activity or a combination of lifestyle elements. Most (280 [88%] of 319) citations had a lead author with a primary affiliation from a high-income country, and 48 (92%) of 52 intervention papers were from high-income countries.

Part 2: What do lifestyle interventions in mental health services currently look like?

We investigated how recent lifestyle interventions are being conducted. We present six case studies of grassroots interventions covering physical activity, nutrition, and smoking cessation across both inpatient and community and outpatient settings in the Global North and Global South.

Part 3: What are the effective components of lifestyle interventions in mental health care?

We examined 18 meta-analyses of lifestyle interventions to understand which aspects or elements were more likely to generate beneficial effects on mental and physical health outcomes for people with mental illness. We generated eight recommendations that were reviewed by the lived experience groups, the Global South Advisory Group, and a broader authorship team, and modified where appropriate.

Part 4: What are the barriers and enablers to the implementation and delivery of lifestyle interventions in mental health settings?

We present a qualitative evidence synthesis summarising the key barriers to implementing and delivering lifestyle

interventions within mental health care. We identify opportunities and 18 priorities for action at the system's micro, meso, and macro levels to guide implementation and delivery efforts. Additionally, we present ways in which lifestyle interventions can be implemented and delivered to address the needs of people with mental illness. Each component was reviewed by the lived experience groups, the Global South Advisory Group, and a broader authorship team, and modified where appropriate.

Part 5: Recommendations for implementating lifestyle interventions in mental health services

We offer practical recommendations, in the form of principles and actions, based on the evidence from Parts 3 and 4 of the Commission report, and on the perspectives of the lived experience groups and the Global South Advisory Group. These recommendations describe the evidence that supports the implementation and delivery of lifestyle interventions in mental health services.

Part 1: What was the effect of the 2019 *Lancet Psychiatry* Commission on the field of lifestyle interventions in mental health care?

Introduction

Since the publication of the 2019 *Lancet Psychiatry* Commission on protecting the physical health of people with mental illness,[1] considerable steps have been taken regarding the recognition, implementation, and scaling up of lifestyle interventions in mental health care. Key milestones have been the inclusion of the Healthy Lifestyles Hub: Promotion of healthy lifestyles to improve mental health in the *World Psychiatric Association Action Plan 2023–2026*,[2] and the establishment of a lifestyle psychiatry special interest group within the American Psychiatric Association.[3] These translational outcomes reflect the increasing evidence base to which the 2019 Commission[1] contributed. As of March, 2024, 17 unique policy documents, consensus and position statements, and guidelines, and 319 journal articles considering relevant lifestyle interventions had cited the 2019 *Lancet Psychiatry* Commission[1] according to PlumX Metrics and Scopus (appendix p 2).

Policy documents, consensus and position statements, and guidelines

All 17 policy, consensus and position statements, and guidelines were published in English,[4–20] with one document from WHO[4] available in three additional languages (table 1).[21–23] Four documents were from organisations with a global or international focus.[4–7] The remaining ten documents had a national or state focus: one each from England[8] and Belgium,[9] and eight from Australia.[10–17] The three journal article position or consensus statements and guidelines had a broad geographical focus.[18–20] The documents typically referenced the 2019 *Lancet Psychiatry* Commission[1] to acknowledge disparities in life expectancy and physical health, and only a few cited it in the context of lifestyle interventions.

The Belgian Health Care Knowledge Centre[9] extensively cited the 2019 *Lancet Psychiatry* Commission,[1] emphasising the need for lifestyle assessment tools and guidelines, specialist clinicians to deliver lifestyle interventions (eg, exercise professionals), and a collaborative care approach. 2023 guidelines from the World Federation of Societies of Biological Psychiatry and Australasian Society of Lifestyle Medicine acknowledged the Commission's potential dual benefit for improving depressive symptoms and physical health in patients with major depressive disorder.[18] A report brokered by the Sax Institute for the New South Wales Ministry of Health, Australia, cited the Commission in the context of the inadequate support and care for the physical health of people living with mental illness.[14] The report provided recommendations for implementing programmes to improve the physical health of people who receive support from community-managed organisations (non-governmental, and not-for-profit organisations that offer mental health services within communities). These recommendations were: refer consumers to physical health care providers and services, support the integration of new models or initiatives with multistrategy implementation components, undertake a comprehensive, systematic assessment of organisation-specific barriers and enablers and identify evidence-based solutions, involve mental health peer workers in the delivery and support of physical health interventions, coproduce physical health-care interventions with community-managed organisation consumers and staff, and tailor existing evidence-based physical health-care interventions for mental health community-managed organisation consumers.[14]

Journal articles

The majority of the 319 journal articles concentrated on multiple lifestyle elements (144 articles [45%]) or physical activity (123 [39%]). Others focused on nutrition (38 [12%]), smoking (6 [2%]), oral health (5 [2%]), and sleep (3 [1%]). Most articles were original data publications (213 [67%]), followed by review articles (72 [23%]), and editorials or perspectives (25 [8%]), with a small number of consensus and position statements and guidelines, books or book chapters, and conference papers. Nearly all (313 [98%]) were published in English only. 77 (24%) articles had at least one affiliation from an upper-middle-income country, 7 (2%) had at least one affiliation from a lower-middle-income country, and 6 (2%) had at least one affiliation from a low-income country. 281 (88%) of the first authors' primary affiliations were from a high-income country, 38 (12%) were from an upper-middle-income country, and one primary affiliation (<1%) was from a lower-middle-income country (figure 1A). Of the 52 articles describing

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	Title	Citation context
Global or international focus		
Organisation for Economic Co-operation and Development Health Policy Studies (2021)[7]	*A new benchmark for mental health services: tackling the social and economic costs of mental ill-health*	"People with mental health conditions have been found to be at a 1·4 to 2 times higher risk of obesity, diabetes and cardiovascular disease compared to the general population" p 135; "Additionally, studies have identified people with mental ill health to display behaviours that are risk factors for physical diseases at a higher rate, such as smoking, excessive alcohol consumption, dietary risks, physical inactivity and sleep disturbance" pp 135–36; "Additionally, the use of lifestyle interventions can act as a low-threshold treatment, resulting in increased treatment adherence, especially for disengaged service users in more traditional mental health treatments" pp 150–51
World Economic Forum (2022)[6]	*Governance frameworks in digital mental health*	"For the estimated 1 billion people living with mental ill health, such as depression, anxiety, personality disorders, schizophrenia and substance abuse, life expectancy is 10 to 30 years lower than that of individuals with typical neurological development and functioning." p 5
WHO (2023)[4]	*Field test version: mhGAP Community Toolkit: Mental Health Gap Action Programme (mhGAP)*; additional languages: Ukrainian,[21] Estonian,[22] and Spanish[23]	Listed under Further reading p 100
Lee et al (2020)[5]	*Development and implementation of guidelines for the management of depression: a systematic review*	"Higher rates of multimorbidity and poorer physical health outcomes are observed among individuals with mental disorders, relative to those without mental disorders; these factors contribute excess morbidity and mortality among individuals with depression, particularly in low- and middle-income countries." p 683; "Low- and middle-income countries are differentially affected by multimorbidity, which drastically reduces life expectancy and increases personal, social and economic burden." p 689
National or state focus		
Australian Government Department of Health (2021)[10]	*National Preventative Health Strategy 2021-2030. Valuing health before illness: living well for longer*	"As those with severe mental illness have a reduced life expectancy compared with the rest of the population, there needs to be a specific focus on how these people access relevant services and are supported to improve their physical health." p 70
Broerse et al (2021)[13]	*Getting Australia's health on track: priority policy actions for a healthier Australia (Second edn)*	"Australian and international research has demonstrated the success of treating mental and physical co-morbidities." p 21; "Despite existing evidence, there are considerable implementation gaps and more evidence of effective care models is needed" p 21
Jespers et al (2021)[9]	*Somatic health care in a psychiatric setting*	Extensively cited, with tables and figures adapted and reproduced: "The comprehensive review by Firth et al summarises the most recent status in the field with the challenges, actions for improvement and solutions, and lists future research priorities." p 50; "An important aspect pointed out by Firth et al. is that no suitable tools are available for clinicians to comprehensively assess lifestyle factors as part of standard care. Clinical guidelines are increasingly recommending that assessments of diet, physical activity, and health risk behaviours are done alongside assessments of biological parameters e.g. blood pressure, glucose, lipids, to assess current somatic health and future risk. Importantly, it was also shown that the sole use of biological markers e.g. high blood pressure, and an abnormal lipid profile, meant that interventions were prescribed too late in the process to protect metabolic health or pre-empt obesity." p 58; "These tools partially address the need as framed by Firth et al., to develop instruments to comprehensively assess lifestyle factors as part of standard care." p 58; "It was noted by Firth et al. that the integration of qualified exercise professionals into mental health services could ensure mental health staff's knowledge on how to give clear advice on exercise. The qualification of exercise professionals also mattered greatly to the physical and psychological benefits and adherence outcomes as compared with interventions delivered by non-specialised practitioners." p 66; "Collaborative care approaches, described in the review by Firth et al., all use structured management plans, scheduled patient follow-ups, and extensive interprofessional communication." p 73
Government of Western Australia, Department of Health (2024)[11]	*Western Australian health promotion strategic framework 2022-2026: a 5-year plan to reduce preventable chronic disease and injury due to common risk factors in our communities*	"In Australia, people with mental health issues experience a 20-year gap in life expectancy compared to the general population. While suicide contributes to a considerable proportion of premature deaths, the majority of years of life lost relate to poor physical health including a higher prevalence of chronic conditions such as heart and lung disease and cancer, some of which is attributable to smoking, overweight and obesity, and alcohol use" p 19
Group of Eight (2020)[16]	*COVID-19 roadmap to recovery – a report for the nation*	"People with mental illness are also at increased risk of physical comorbidities" p 142
Guu et al (2020)[20]	*A multi-national, multi-disciplinary Delphi consensus study on using omega-3 polyunsaturated fatty acids (n-3 PUFAs) for the treatment of major depressive disorder*	"The antidepressant effects of omega-3 polyunsaturated fatty acids (n-3 PUFAs), particularly eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), as well as their clinical safety profiles and effects on relevant biomarkers, are reported in several randomized controlled trials, subsequently aggregated into multiple meta-analyses" p 234
Marx et al (2023)[18]	*Clinical guidelines for the use of lifestyle-based mental health care in major depressive disorder: World Federation of Societies for Biological Psychiatry (WFSBP) and Australasian Society of Lifestyle Medicine (ASLM) taskforce*	In reference to lifestyle-based approaches to managing major depressive disorder, "this approach may offer a dual benefit, addressing clinical symptoms of MDD while potentially mitigating physical comorbidities – a recognised challenge for those with mental illness" p 4; listed as a resource, p 49

(Table 1 continues on next page)

	Title	Citation context
(Continued from previous page)		
Machaczek et al (2022)[19]	*A whole systems approach to integrating physical activity to aid mental health recovery – translating theory into practice*	"PA [physical activity] is recommended in the Lancet Psychiatry Commission, in European Psychiatric Association guidance and by the International Organisation of Physical Therapists in Mental Health for the treatment of SMI [severe mental illness]. The Lancet Psychiatry Commission recommends that healthy lifestyle programmes be integrated into routine mental health care and made accessible for all people living with mental illness." p 2
National Health Service (2021)[8]	*Managing a healthy weight in adult secure service – practice guidance*	"There is a strong and growing evidence base supporting the effects physical activity can have on both physical health benefits and in the preventative and treatment effects on psychiatric symptomology for people experiencing a range of mental disorders. It is recommended that the assessment and promotion of physical activity as a component of care within mental health services is 'incorporated as part of routine psychiatric care regardless of diagnosis and across all treatment settings'" p 39
NSW Health (2021)[12]	*Acute mental health inpatient unit risk mitigation and models*	"Disparities in morbidity and mortality in people with a lived experience of mental health issues compared to general populations have been unequivocally established." p 3
Productivity Commission (2020)[15]	*Mental health productivity commission inquiry report*	"While there have been advancements in research and healthcare, physical health outcomes have not changed for those with mental illness, and the years of life lost due to physical conditions for people with mental illness may be increasing" p 123
Bartlem et al (2021)[14]	*Initiatives to improve physical health for people in community-based mental health programs*	"People living with a mental illness are less likely to receive care or support for their physical health, which leads to physical conditions being undiagnosed and untreated" p 12
Metro South Hospital and Health Service (2019)[17]	*Addiction and mental health services research and learning year in review 2018*	Listed as a peer-reviewed publication attributable to people affiliated with the Addiction and Mental Health Service, p 61

Policy documents, consensus and position statements, and guidelines relevant to lifestyle interventions that cited the 2019 *Lancet Psychiatry* Commission from July, 2019, to March, 2024. Policy documents were identified as such by PlumX Metrics. Consensus and position statements and guidelines were identified by a Scopus search.

Table 1: **Policy documents, consensus and posistion statements, and guidelines and the context within which the 2019 *Lancet Psychiatry* Commission was cited**

an intervention, 48 (92%) of the interventions were done in high-income countries, two (4%) were done in upper-middle-income countries (China and Türkiye), and two (4%) were done in a low-income country (Uganda; figure 1B). No lead authors had a primary affiliation from a low-income country. More characteristics of the journal articles that cited the 2019 *Lancet Psychiatry* Commission and focused on lifestyle interventions are presented in the appendix (pp 3–4). The 2019 *Lancet Psychiatry* Commission was pivotal in drawing attention to the physical health disparities in people with mental illness, but it focused largely on describing the problem and outlining broad recommendations. Analysis of its impact highlighted an absence of practical guidance for implementation, especially in routine mental health settings. Voices from low-resource settings and people with lived experience were also under-represented. Since 2019, a growing evidence base and an increasing volume of implementation studies have emerged. This report was needed to address these gaps by offering actionable and contextually relevant strategies to support implementation.

Part 2: What do lifestyle interventions in mental health services currently look like?

Introduction

We aimed to systematically scope articles describing lifestyle interventions published since the 2019 *Lancet Psychiatry* Commission,[1] and to generate case studies for ongoing lifestyle initiatives in various contexts. Lifestyle interventions were included if they targeted people living with mental illness and focused on multiple modifiable lifestyle risk factors (eg, physical activity, nutrition, smoking cessation, and sleep), as well as those targeting a single modifiable lifestyle risk factor (eg, solely physical activity; panel 1). Full details on the populations, interventions, comparisons and outcomes, search strategies, study identification and synthesis approaches, PRISMA flowchart of study inclusion, and the study details for the 89 interventions (99 publications) are presented in the appendix (pp 5–44). The characteristics, implementation and delivery methods of the studies, attrition and adherence rates, and effectiveness details are also provided in a searchable table.

Convenience sampling was used to identify potential case studies of lifestyle initiatives that had been offered in mental health services. Case studies were written by practitioners, peer workers, and researchers who were associated with the initiative using the template for intervention description and replication framework (appendix pp 45–60).[24] These submissions were then developed into implementation diagrams (figures 2–7).

Lifestyle interventions in mental health care published between Jan 1, 2018, and Aug 17, 2023

Study characteristics

All but one of the 89 (99%) interventions were conducted in high-income countries. 30 interventions were from the USA (34%), eight from Spain (9%), eight from Australia (9%), and the remaining interventions were from the UK, Denmark, Sweden, Netherlands, Germany, Switzerland, Italy, and China. The median sample size was 152 participants (IQR 224.25). The duration of these interventions

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See Online for appendix

For more on the **articles describing lifestyle interventions in mental health care** see http://unsw.to/LifestylePsychiatry

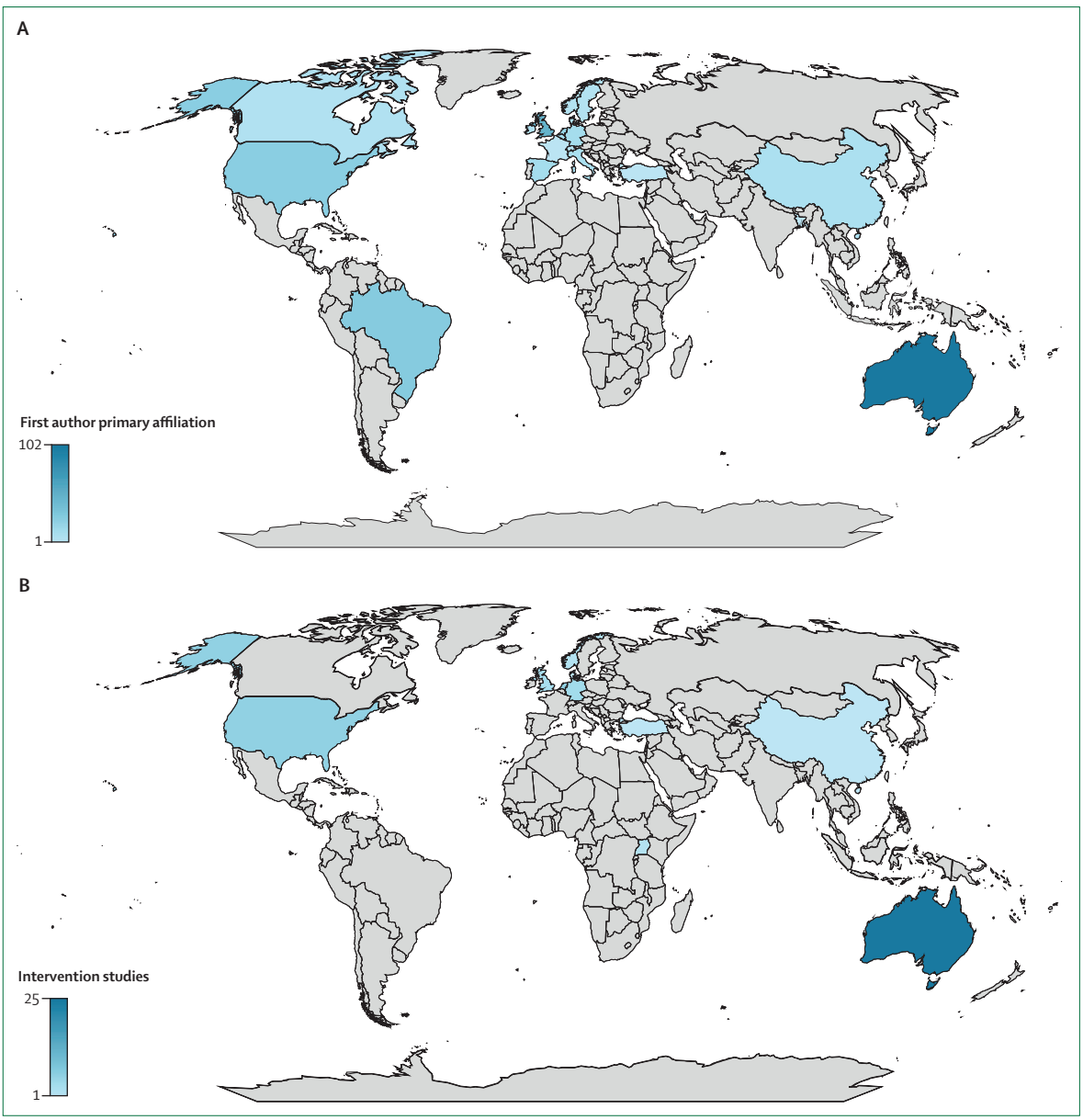

Figure 1: **Heat map of lifestyle-related citations of the 2019 *Lancet Psychiatry* Commission**
(A) First author primary affiliation. (B) Country where the intervention was done.

varied widely, with the most common being 3 months (20 studies [22%]), 12 months (15 studies [17%]), and 2 months and 6 months (nine studies [10%] each).

Intervention type

The types of interventions explored in these studies varied. 57 interventions (64%) included physical activity as a key intervention component, often implemented through structured aerobic exercise programmes. 37 interventions (42%) incorporated dietary interventions or included nutrition as part of a multicomponent approach. Smoking cessation was addressed in 34 interventions (38%). Sleep interventions, which targeted sleep hygiene or incorporated sleep as part of broader health initiatives, were included in 15 interventions (17%).

Delivery

Involvement of individuals with lived experience of mental illness in the design or development of the interventions was reported for only five interventions (6%), and peer-delivery methods were used in five interventions (6%), predominantly in community settings. 41 interventions (46%) exclusively used individual sessions, 25 interventions (28%) used mixed delivery—combined individual and group

sessions—and 21 interventions (24%) exclusively used group delivery. 37 interventions (42%) incorporated elements of flexible delivery (eg, in person, telehealth, and/or home visits). Most (72 interventions; 81%) included elements of self-management, and 43 interventions (48%) featured elements of self-monitoring. 14 interventions (16%) used health-care technology, such as mobile apps or online platforms, to enhance engagement and accessibility. Expert clinicians were involved in the delivery of 20 interventions (22%), and 43 interventions (48%) reported providing supervision or training for those who delivered the interventions.

Adherence, attrition, and intervention fidelity

Attrition, adherence, and fidelity data were reported inconsistently across interventions. Attrition rates were documented in 64 interventions (72%), with the most common level being low attrition (<20%), observed in 28 interventions (31%). Moderate attrition (20–40%) was reported in 11 interventions (12%), and high attrition (>40%) was observed in seven interventions (8%). Several interventions indicated mixed patterns, such as increasing attrition over time or differences between intervention and control groups.

Adherence was reported for 32 interventions (36%), with high adherence (>80%) noted in 16 interventions (18%), and low or moderate adherence observed in six interventions (7%). Long-term post-intervention follow-ups often revealed substantial drops in adherence, suggesting strong initial adherence during the active study phase, but challenges in maintaining participant engagement over time. Fidelity was reported for only four interventions (4%). The inadequate reporting on adherence to interventions and intervention fidelity emphasises the necessity for improved documentation in future trials of lifestyle interventions for people living with mental illness in accordance with reporting guidelines, such as the CONSORT 2025 statement.[33]

Effectiveness

The studies involved the assessment of a wide range of outcomes, including psychiatric, health behaviour, cognition, cardiometabolic, and cost-effectiveness outcomes. Psychiatric and quality-of-life outcomes were reported in 34 studies, with 29 studies (85%) showing positive effects. Of the 26 studies that considered cardiometabolic outcomes, 15 (58%) showed improvements. Other commonly reported outcomes included improvements in smoking cessation and alcohol use (20 [80%] of 25 studies), physical fitness and activity (19 [83%] of 23 studies), sleep (nine [69%] of 13 studies), and dietary knowledge and behaviour (nine [100%] of nine studies). All three studies with cognitive outcomes reported favourable between-group effects.

***Panel 1*: Search strategy to identify lifestyle interventions delivered in mental health care**

The MEDLINE, Scopus, PsychINFO, and CINAHL databases were searched with no language restrictions from Jan 1, 2018, to Aug 17, 2023, using (((schizo*[Title] OR "mental illness"[Title] OR "mental disorder*"[Title] OR psychiatr*[Title/Abstract] OR depress*[Title] OR bipolar[Title] OR anxiety[Title] OR substance abus*[Title] OR 'substance use'[Title] OR eating disorder*[Title] OR psychosis[Title] OR psychotic[Title]) AND ("physical activity"[Title] OR exercis*[Title] OR "resistance training"[Title] OR aerobic[Title] OR fitness[Title] OR diet*[Title] OR nutrition[Title] OR "weight"[Title] OR sleep[Title] OR insomn*[Title] OR smoking[Title] OR tobacco[Title] OR nicotine[Title] OR lifestyle*[Title/Abstract])) AND (guideline[Title/Abstract] OR "meta-analys*"[Title/Abstract] OR "systematic review*"[Title/Abstract] OR metaan*[Title/Abstract] OR Randomised[Title/Abstract] OR Randomized[Title/Abstract] OR Controlled[Title/Abstract] OR Intervention[Title/Abstract] OR trial[Title/Abstract])).

Cost-effectiveness

Six studies included an economic analysis, with five (83%) reporting favourable outcomes.[34–39] Three studies conducted an economic analysis on smoking cessation interventions, with all three (100%) finding favourable outcomes.[34–36] Healy and colleagues[34] found that community-based smoking cessation services, which include pharmacological treatments, nicotine replacement therapy, and either group or individualised support, had an incremental cost per quality-adjusted life-year gained from quit attempts. The costs associated with these more frequently provided interventions ranged from approximately £4700 to £12 200. The combination of medication with group-based behavioural support was estimated to offer better value for money than individual support. Li and colleagues[35] assessed a community-based, individual, in-person, smoking cessation programme delivered by a smoking cessation practitioner. The programme offered 12 sessions for 30 min over 12 months and found that the mean total cost for the intervention group was £270 lower than usual care. Mattock and colleagues[36] assessed two community-based smoking cessation programmes, with both interventions deemed cost-effective from a UK health-care perspective. Two studies conducted an economic analysis on Mediterranean diet interventions for depression, both with favourable outcomes.[37,38] Chatterton and colleagues[37] found that the SMILES trial, which included seven 60 min sessions with a dietitian over a 3-month period, focusing on a modified Mediterranean diet for people with depression, compared with a social support control group (befriending), had, on average, AU$856 lower heath sector costs, and $2591 lower societal costs. These differences were predominantly due to fewer visits to other health professionals and lower costs related to unpaid

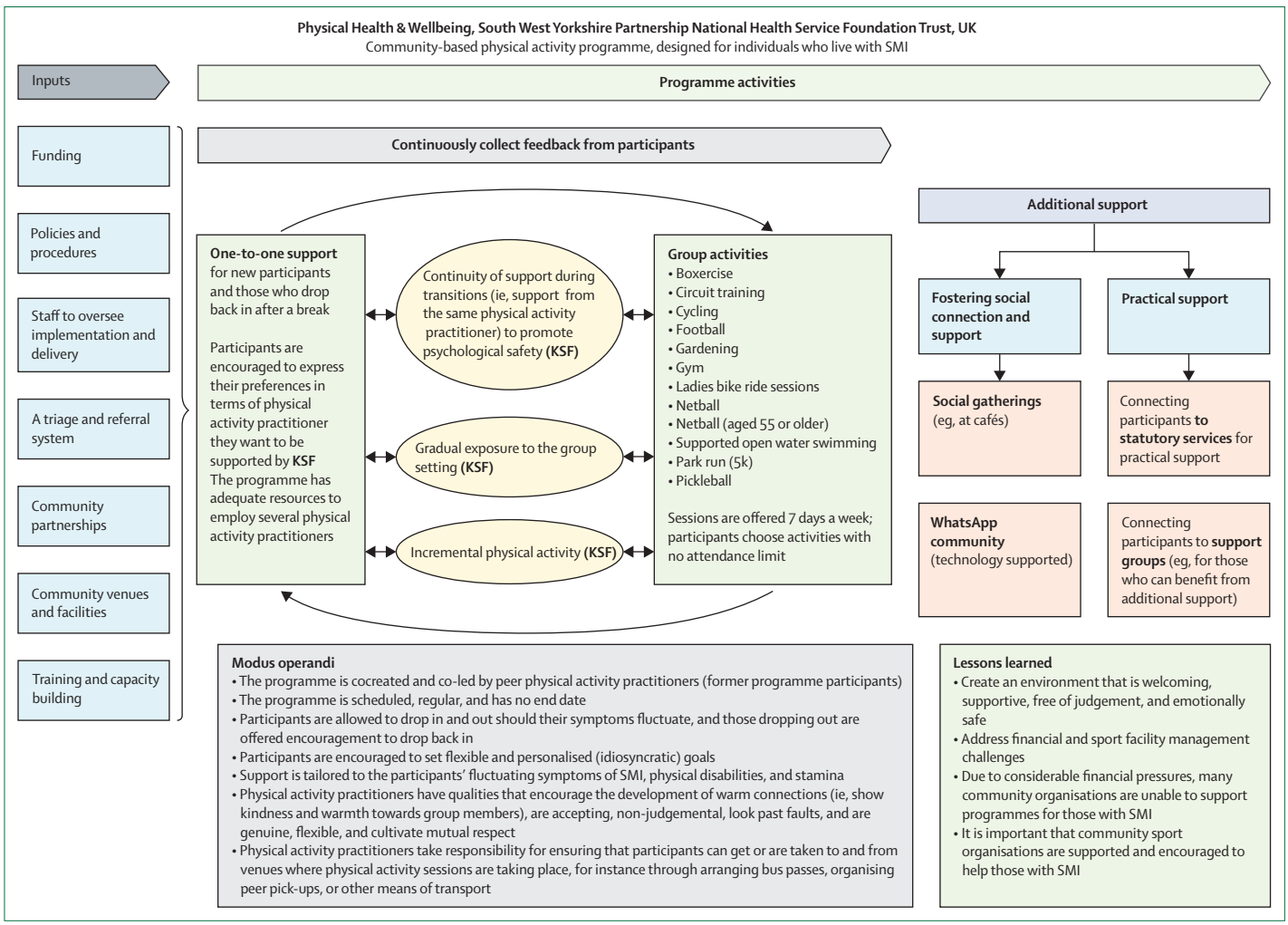

Figure 2: **Case study describing implementation and delivery for the Physical Health & Wellbeing programme**
Key success factors were determined by both those internal to the programme and Commission authors after the original written submission and during the creation of the figure. KSF=key success factor. SMI=severe mental illness.

productivity. Segal and colleagues[38] assessed the effect of a community-based, in-person, group Mediterranean diet intervention delivered by dietitians compared with a social group programme. The group intervention was highly cost-effective when measured using the cost per quality-adjusted life-year gained and the cost per resolved case of major depression compared with the social programme.

Looijmans and colleagues[39] assessed a community-based physical activity and nutrition programme that included a web tool called Traffic Light Method for Somatic Screening and Lifestyle. Supported by nurses, participants in the intervention group used the tool to assess their lifestyle behaviours and develop a plan with specific lifestyle change goals. During care visits every two weeks over 6 months, patients and nurses evaluated the patients' progress towards achieving their goals. After this period, patients and nurses reassessed the lifestyle behaviours, updated the lifestyle plan, and continued to evaluate this revised plan for the next 6 months until the trial concluded. Patients in the control group received usual care. There was no between-group difference for anthropometric or metabolic syndrome Z scores; therefore, the intervention was not cost-effective.[39]

Most of the interventions were conducted in high-income countries, which restricts the applicability of the findings to low-income countries, especially the cost-effectiveness data. Limited representation from the Global South in the evidence base creates a risk of geographical bias, potentially overlooking the unique challenges and resource constraints in those regions.

Case studies

We include six real-world case studies in the report. These cover different types of lifestyle interventions, including physical activity, nutrition, and smoking; various environments, including inpatient and community settings; and interventions delivered in

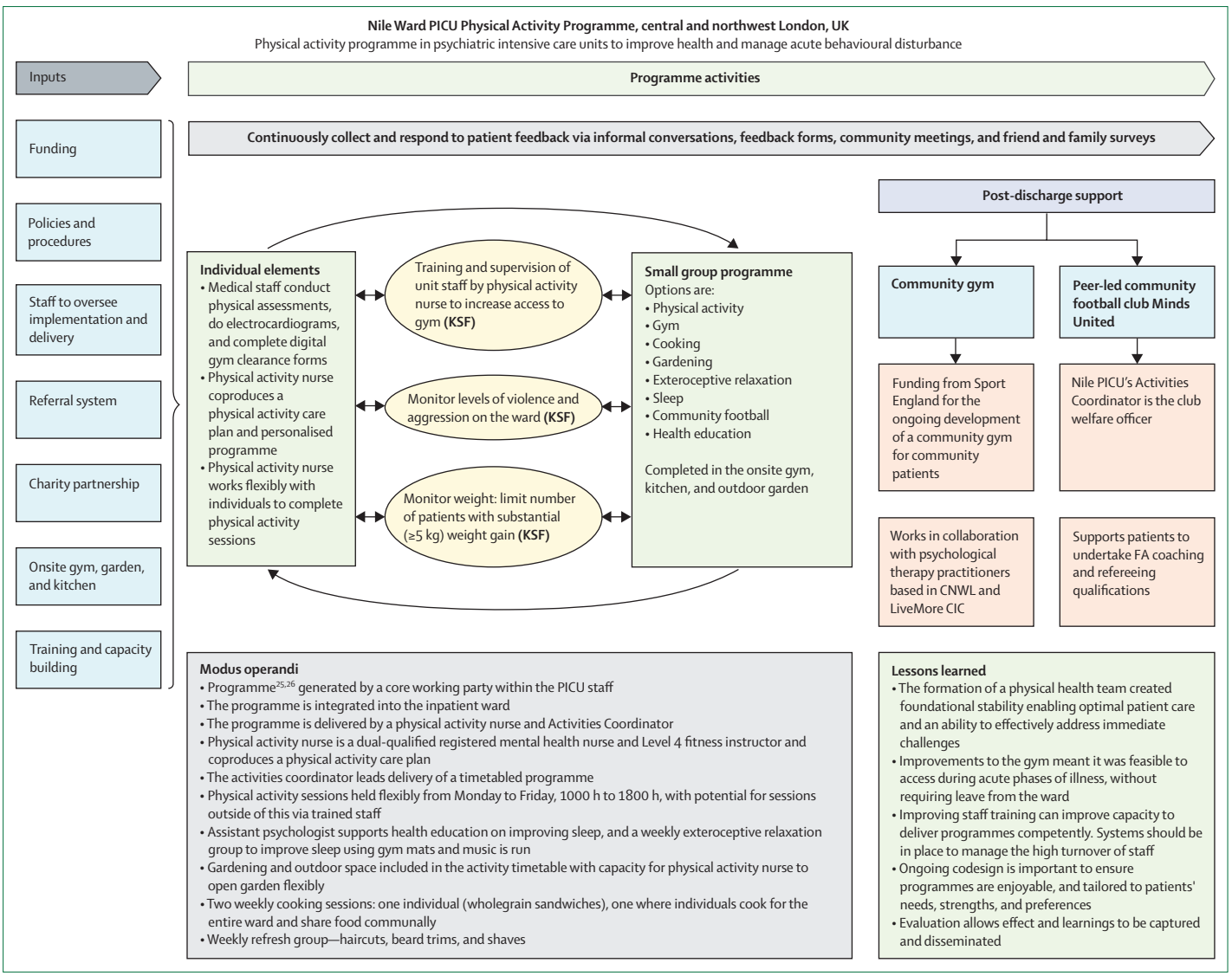

Figure 3: **Case study describing implementation and delivery for the Nile Ward PICU Physical Activity Programme**
Key success factors were determined by both those internal to the programme and Commission authors after the original written submission and during the creation of the figure. CNWL=central and northwest London. CIC=community interest company. FA=Football Association. KSF=key success factor. PICU=psychiatric intensive care unit.

countries from both the Global North and Global South. Information from these case studies was used to inform the implementation and delivery example diagrams presented in figures 2–7.

Part 3: What are the effective components of lifestyle interventions in mental health care?

Introduction

The effectiveness of lifestyle interventions delivered to people who are engaged with mental health services has been shown for aspects of both physical and mental health outcomes.[40,41,42] However, the variations in intervention methods and reported outcomes highlight the need to identify the most effective components of these interventions.

We conducted a scoping review across four databases (MEDLINE, Scopus, PsychINFO, and CINAHL) to identify meta-analyses of both standalone (eg, solely physical activity) and multicomponent (eg, physical activity, nutrition, and smoking cessation) lifestyle interventions that have identified effective strategies to improve health outcomes through primary or subgroup analysis or meta-regression. The search strategy is presented in panel 2. Full details on the search strategy, study identification and purposive sampling, PRISMA flowchart of study inclusion, details on the 18 included meta-analyses,[43–60] and study quality scores are presented in the appendix (pp 61–87). We extracted data on the effectiveness of interventions and examined effectiveness data for seven predefined intervention

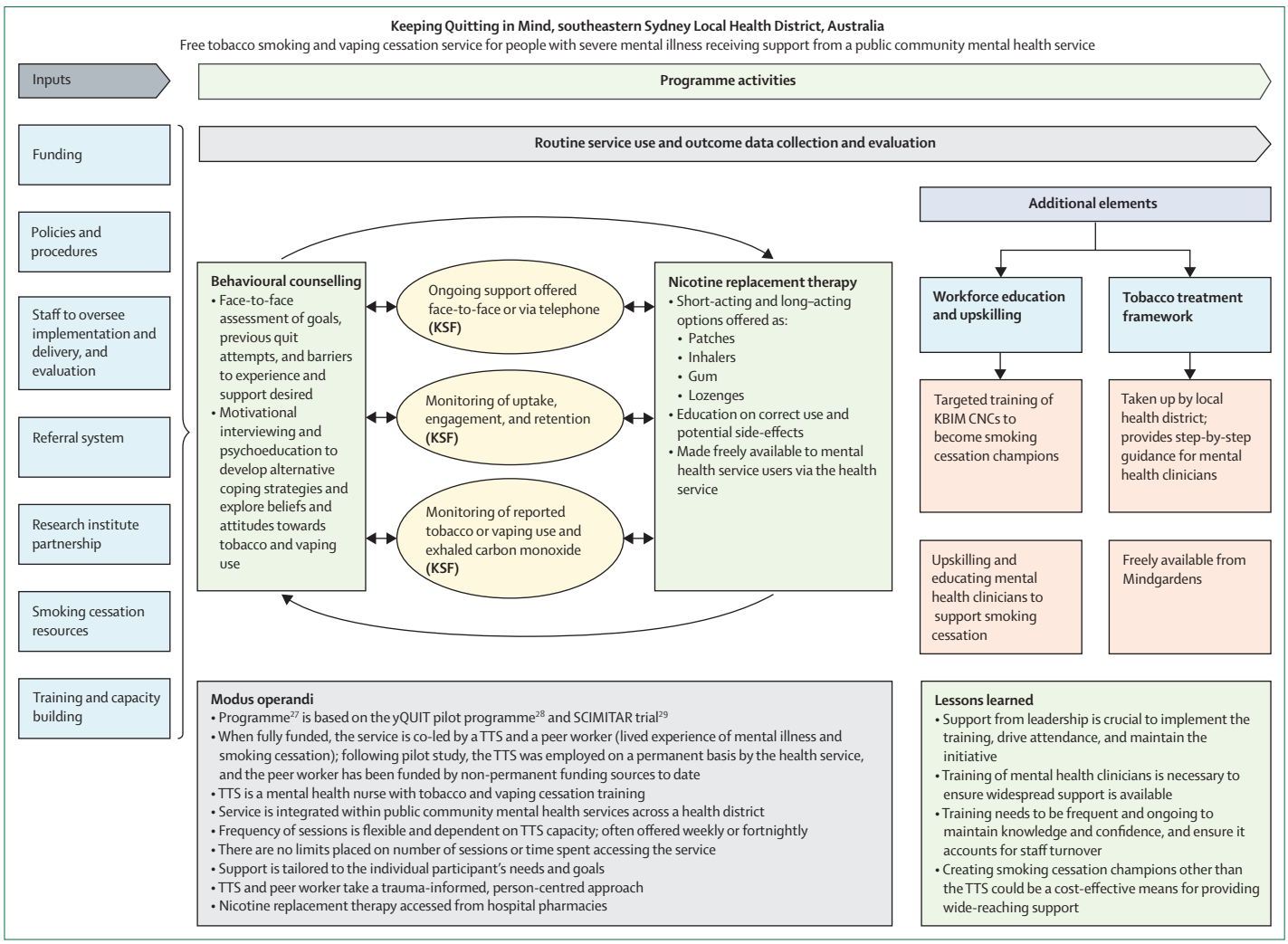

Figure 4: **Case study describing implementation and delivery for Keeping Quitting in Mind**
Mindgardens Neuroscience Network is a translational research centre in Australia that accelerates the transition of new insights into everyday practice for mental health, and drug and alcohol use disorders and neurological disorders. Key success factors were determined by both those internal to the programme and Commission authors after the original written submission and during the creation of the figure. CNC=clinical nurse consultant. KBIM= Keeping the Body in Mind programme. KSF=key success factor. TTS=tobacco treatment specialist.

For more on **Mindgardens** see https://www.mindgardens.org.au/kbimresources/

components.[61] These were theoretical basis, behaviour change techniques, mode of delivery, intervention provider, intensity, characteristics of the target population, and setting. We extracted data as number of studies (*k*) and measures of effect, such as Hedges' g (*g*), point estimate (PE), and weighted mean difference (WMD). 16 meta-analyses explored nutrition and physical activity interventions (physical activity specific, *k*=10; multiple lifestyle elements, *k*=5; and nutrition specific, *k*=1).[43–58] In the two remaining meta-analyses, the effectiveness of sleep deprivation on depression was assessed.[59,60] No meta-analyses were identified in which effective components of smoking cessation interventions were assessed. A set of evidence-based statements for the delivery of interventions was generated then reviewed by the lived experience groups and the GSAG (panel 3). The recommendations were modified where appropriate (panel 4).

Effective components of lifestyle interventions

Theoretical basis—theory of behaviour change

Romain and colleagues[55] found that exercise interventions grounded in motivational theory (eg, self-determination theory, social cognitive theory, self-efficacy theory, and transtheoretical models) were effective in increasing physical activity (*k*=8; *g*=0·27), and in reducing weight (*k*=10; WMD=–1·87 kg), BMI (*k*=11; WMD=–0·82 kg/m²), waist circumference (*k*=9; WMD=–1·91 cm), and fasting glucose (*k*=7; *g*=–0·17).Interventions grounded in only one theoretical model of motivation had larger effect sizes for physical activity (*k*=6 *vs* *k*=2; *g*=0·34 *vs* *g*=0·10) and weight (*k*=5 *vs* *k*=5; WMD=–2·51 kg *vs* WMD=1·72 kg),

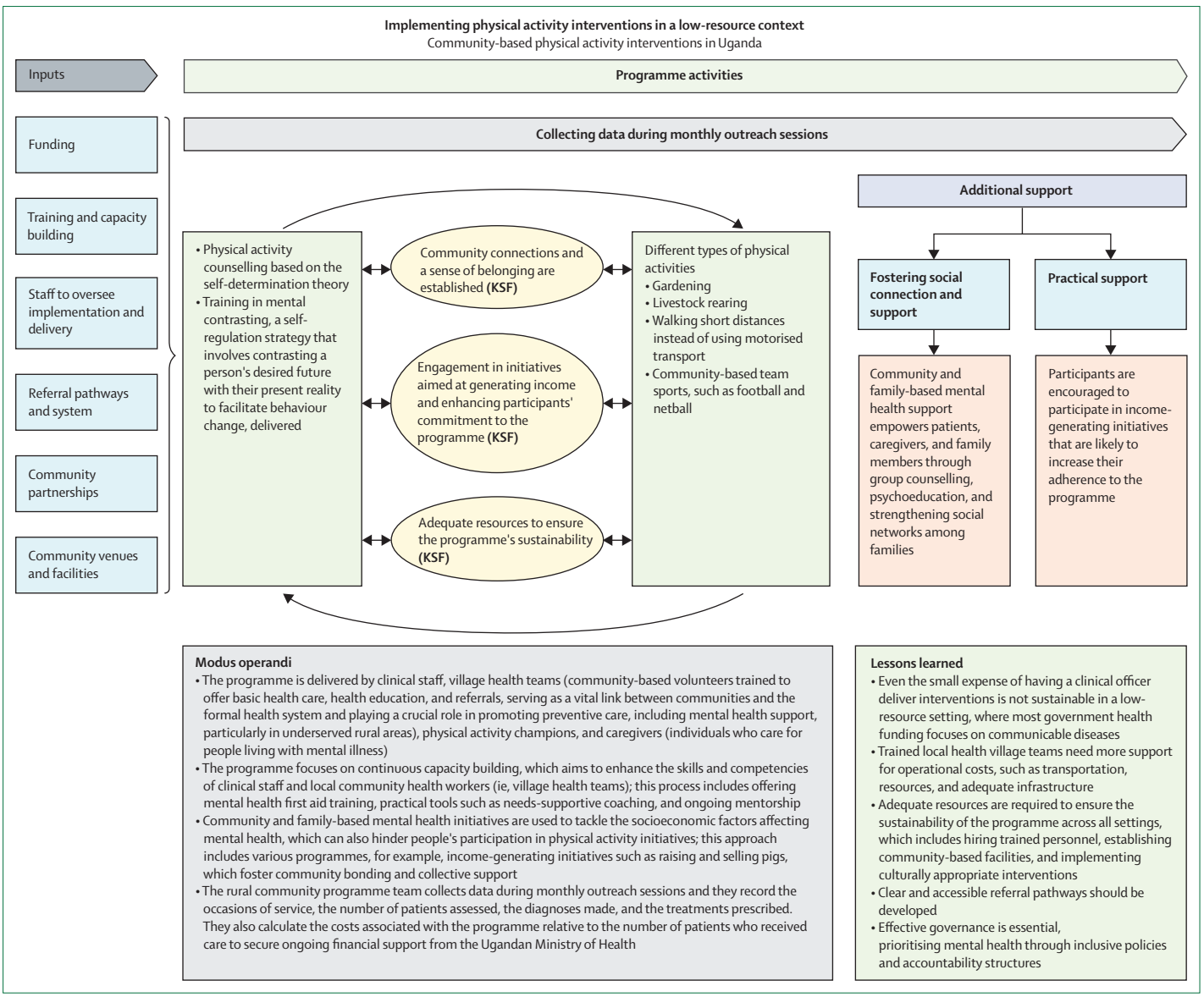

Figure 5: **Case study describing the implementation of physical activity interventions in a low-resource context**
Key success factors were determined by both those internal to the programme and Commission authors after the original written submission and during the creation of the figure. KSF=key success factor.

compared with interventions based on multiple motivational theories.[55]

Behaviour change techniques

Romain and colleagues[55] found that exercise interventions that included goal and planning components of behaviour change techniques had a small effect (k=6; g=0·29), whereas those that involved other domains of behaviour change techniques did not have an effect. The interventions had a greater effect on physical activity in studies that did not include the social-support (k=6; g=0·26) and shaping-knowledge (k=4; g=0·45) domains of behaviour change techniques compared with those that did. Vancampfort and colleagues[58] found that fewer participants dropped out of exercise interventions that used autonomous motivation strategies (self-determined, consistent with participants' intrinsic goals) compared with those that did not use autonomous motivation strategies (k=7; 7·2% [95% CI 4·2–12·3] *vs* k=9; 30·4% [23·6–28·2]), and fewer people dropped out of studies that did not use controlled motivational strategies (non-self-determined, external reasons; eg, perceived approval) compared with studies that did use controlled motivation strategies (k=12; 12·2% [7·1–20·2] *vs* k=4; 26·5% [13·8–44·9]).[58]

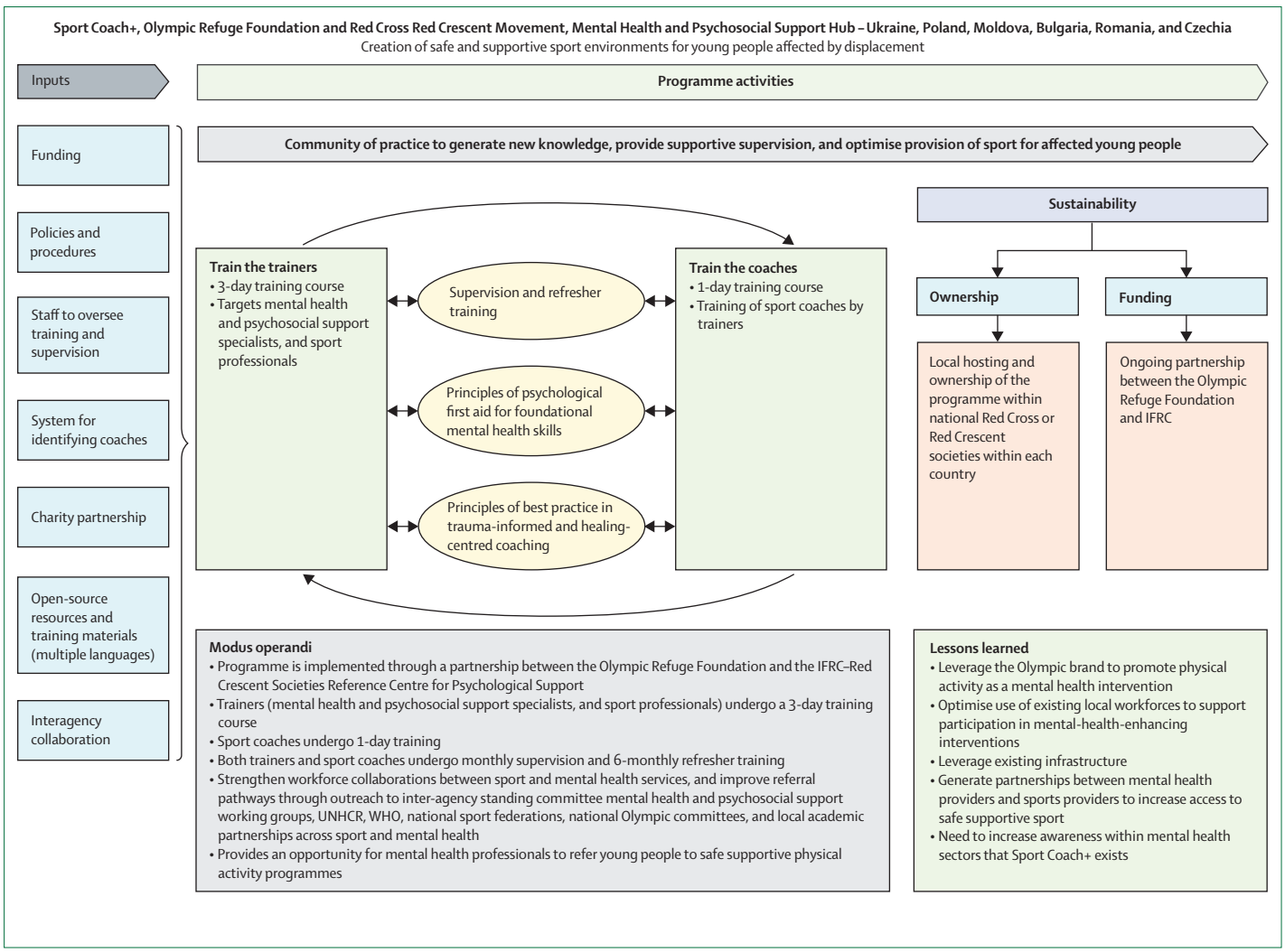

Figure 6: **Case study describing implementation and delivery for Sport Coach+, Olympic Refuge Foundation, and Red Cross Red Crescent Movement Mental Health and Psychosocial Support Hub**

IFRC=International Federation of the Red Cross. UNHCR=United Nations High Commissioner for Refugees.

Mode of delivery

Analyses comparing individual and group delivery found mixed and sometimes conflicting effects on physical and possibly mental health, although including both might have unique benefits. Fernández-Abascal and colleagues[45] found that lifestyle interventions that included individual or group components had similar effects on standard anthropometric and metabolic biochemical parameters; however, the group-based approaches showed large effects on BMI (k=18; g=–1·02), whereas individual interventions had a small effect (k=6; g=–0·43). Mucheru and colleagues[51] found that lifestyle interventions that offered personalisation and consistent progress reviews (ie, a structured approach) had larger effects on bodyweight (k=4; ES [effect size]=–5·36). In contrast, non-structured approaches did not have a statistically significant effect (k=8; ES=0·39).[51] Speyer and colleagues[56] found that lifestyle interventions delivered as individual sessions had the largest effect on BMI (k=10; PE=–1·28 kg/m²), followed by combined group and individual approaches (k=15; PE=–0·43 kg/m²). For exercise-specific interventions, findings were mixed; both individual and group sessions conferred benefit.[43,49,50] For nutrition-specific interventions, individual sessions effectively reduced BMI (k=3; SMD [standardised mean difference]=–0·30). In contrast, there was no overall effect when including individual, group, and mixed dietary interventions (k=10; SMD=–0·11).[54] Mental health services should offer interventions that are both individual (eg, education, behaviour change and health coaching, and personalised exercise and nutrition programmes) and group based (sports or exercise and cooking and nutrition education groups), which can cater for heterogeneous presentations in terms of age, gender, illness severity, and readiness or motivation to change.

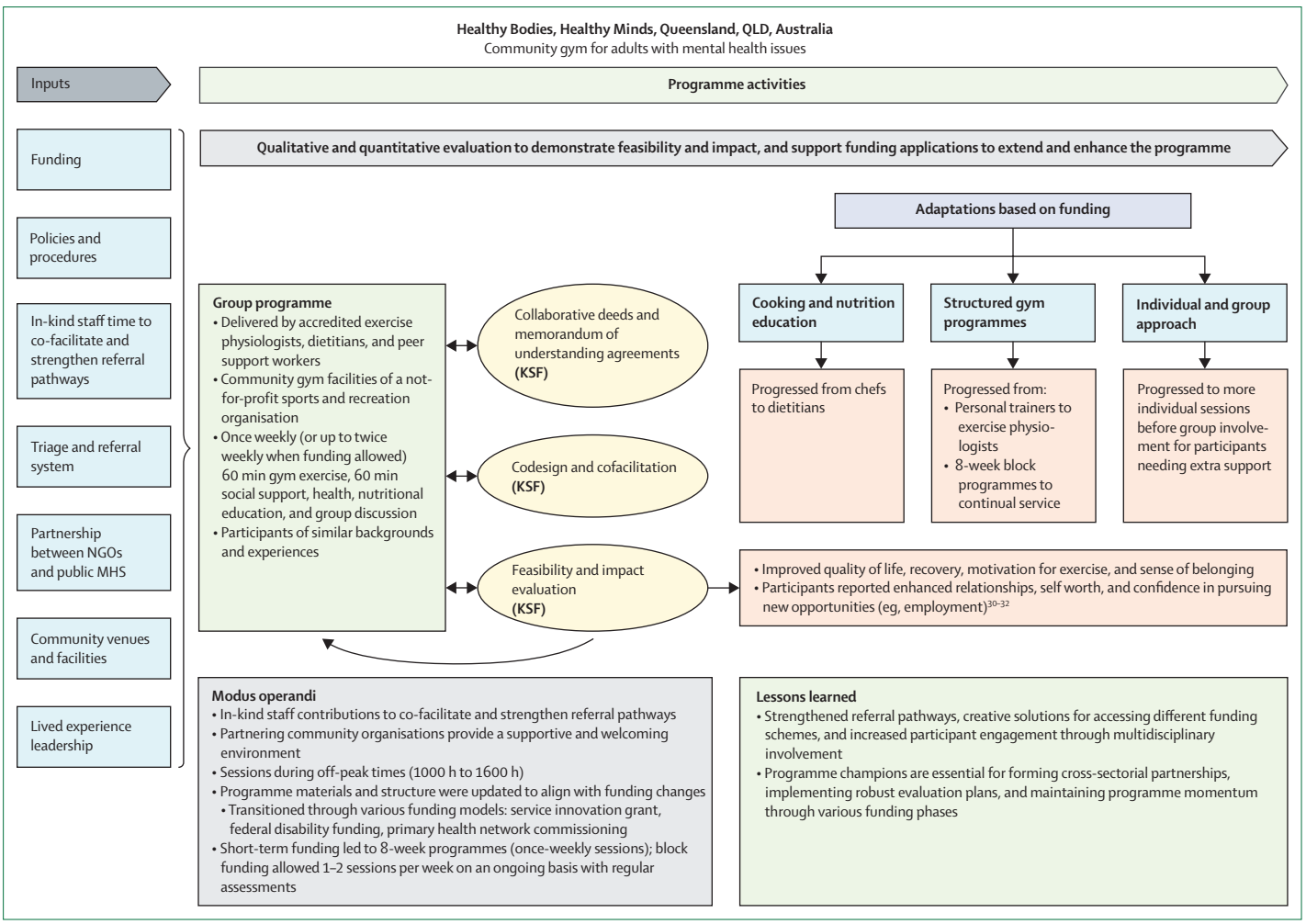

Figure 7: **Case study describing implementation and delivery for the Healthy Bodies, Healthy Minds programme**
Key success factors were determined by both those internal to the programme and Commission authors after the original written submission and during the creation of the figure. MHS=mental health services. NGO=non-governmental organisation. KSF=key success factor.

Fernández-Abascal and colleagues[45] found that combined exercise and psychotherapy interventions were most effective in terms of anthropometric measures (eg, BMI; k=3; g=–2·75), followed by exercise-based therapy (eg, BMI; k=7; g=–0·91), whereas effects on metabolic biochemistry and psychiatric measures were less clear. Speyer and colleagues[56] found that both diet interventions (k=10; PE=–1·3 kg/m²) and exercise interventions (k=5; PE=–1·13 kg/m²) had large effects on BMI, although combined interventions had a small-to-moderate effect (k=32; PE=–0·51 kg/m²). The outcomes varied depending on the type of exercise.[45–49,53] These findings suggested that different types of exercise conferred different benefits and that programmes should be guided by participant preference.

Vancampfort and colleagues[58] identified that dropout rates for people with anxiety and related disorders were lowest in interventions that offered mixed exercise modalities (k=3; 4% [95% CI 8·4–14·1]), compared with

Panel 2: Search strategy to identify meta-analyses of lifestyle interventions in mental health care

The MEDLINE, SCOPUS, PsychINFO, and CINAHL Databases were searched with no language restrictions from Nov 1, 2018, to May 20, 2024 using (schizo* OR "mental illness" OR "mental disorder*" OR psychiatr* OR depress* OR bipolar OR anxiety OR "substance abus*" OR "'substance use'" OR "eating disorder*" OR psychosis OR psychotic).[Title/Abstract] AND ("physical activity" OR exercis* OR "resistance training" OR aerobic OR fitness OR diet* OR nutrition OR "weight" OR sleep OR insomn* OR smoking OR tobacco OR nicotine OR lifestyle*).[Title/Abstract] AND (intervention OR service OR program* OR modification).[Title/Abstract] AND ("meta-analysis" OR "meta-analyses" OR "metaanalysis" OR "meta regression" OR "pooled effect").[Title/Abstract].

Panel 3: The lived experience groups and the Global South Advisory Group

We collaborated with two groups of individuals living with mental illness and carers recruited through active lived experience advisory groups and organisations: one in the UK and one in Australia. We first gathered members' views about the relevance and importance of the initial recommendations from the 2019 Lancet Psychiatry Commission. We then focused on their perspectives regarding the relevance and importance of the recommendations generated within this Commission report and gathered additional considerations during the process. The inclusion of those with lived experience shaped the recommendations for how to best implement lifestyle interventions in mental health care to address the needs of people with mental illness.

This Commission report was created in collaboration with 14 academic, clinical practitioner, and lived experience colleagues representing 10 conflict-affected and low-income, middle-income, or upper-middle-income regions, termed the Global South Advisory Group.

those that used strength training (*k*=2; 16% [3·8–46·6]) and aerobic exercise (*k*=8; 20% [11·2–32·1]); the highest dropout rates were from mind–body exercise interventions (*k*=3; 26% [15·7–39·8]).Speyer and colleagues[56] found that interventions in which participants engaged in exercise (eg, group walking programme) had a larger, although non-significant, between-group effect on BMI (PE=–0·75 kg/m²) compared with counselling or coaching (PE=–0·46 kg/m²). Interestingly, Pape and colleagues[52] found that skills training to improve diet (eg, cooking skills and buying groceries) did not affect quality of life (*k*=4; *g*=–0·11).

Intervention provider

Integrating specialist practitioners, such as exercise physiologists or physiotherapists and dietitians or clinical nutritionists, with nationally or internationally recognised qualifications into the delivery of lifestyle interventions, increased intervention effectiveness for multiple outcomes. For example, Rocks and colleagues[54] found that nutrition interventions delivered by dietitians had statistically significant and clinically relevant effects on bodyweight (*k*=5; SMD=–0·28). In contrast, there was no overall effect when including both dietitian and non-dietitian delivered studies (*k*=10; SMD=–0·11).Lederman and colleagues[50] reported that exercise interventions that were supervised by qualified exercise professionals had considerably larger effects on sleep quality (*k*=6; *g*=1·00) compared with those delivered by less qualified supervisors (*k*=2; *g*=0·16). Furthermore, dropout rates from exercise interventions were lower when they were delivered by qualified exercise experts (*k*=7; 7% [95% CI 3·5–13·5] *vs* *k*=9; 26% [18·1–34·9]).[58] There was also notable consistency in terms of larger effects (*k*=40 *vs* *k*=6; SMD=–1·03 *vs* SMD=–0·45)[48] and fewer dropouts (*k*=9; 13% [6·8–24·5] *vs* *k*=7; 18% [9·6–31·9])[58] from supervised exercise sessions compared with unsupervised ones. In the absence of specialist practitioners, it was found that delivery, such as exercise supervision, by mental health clinicians and peer workers with additional support, supervision, and training, might be effective (eg, for depressive symptoms *k*=14; SMD=–1·28).[48] For example, Coles and colleagues[44] found that peer-facilitated interventions improved physical activity levels (*k*=6; SMD=0·19). The ability to use different delivery providers is crucial for lower-income settings, such as the Global South and conflict-affected areas where task shifting (ie, transferring specific tasks from highly qualified health workers to health workers with less training and fewer qualifications[63]) can help address workforce shortfalls, making interventions more feasible and sustainable.

Intensity

Most of the analyses on intensity and frequency pertained to exercise interventions. Pape and colleagues[52] found that interventions that included mainly structured, high-intensity physical activity had a large effect on quality of life (*k*=5; *g*=0·92), and noted that higher rates of attendance in lifestyle interventions had a larger effect on quality of life (*k*=8; *g*=0·46) than lower attendance rates (*k*=8; *g*=–0·02). Chen and colleagues[43] explored the elements of precision exercise in adolescents with depression. The key findings were that exercising three times (*k*=7; SMD=–0·84), or four or five times (*k*=4; SMD=–0·63), per week rather than once or twice (*k*=1; SMD=–0·14) and having sessions of 45–50 min (peak: *k*=4; SMD=–0·93) or 60–75 min (*k*=3; SMD=–0·65) rather than 30–40 min (*k*=4; SMD=–0·47) were more effective; and that varying exercise intensities had similar effects.[43] In other studies that explored intervention intensities, moderate vigorous aerobic exercise and high-intensity interval training, and having at least three sessions per week, had larger effects on various outcomes than lower intensity and fewer sessions.[45–49,52,53,57] However, Vancampfort and colleagues[58] found that dropout rates were similar across intensity levels, but lower for interventions that comprised sessions of shorter duration (16 mins, *k*=2; 5% [95% CI 4·2–35·0]; 30 mins, *k*=4; 16% [5·4–39·0]; 60 mins, *k*=2; 20% [5·0–53·9]; 90 mins, *k*=3; 14% [3·7–40·4]). Physical activity interventions should balance the established benefits of higher intensity and frequency with the need for individualised approaches, starting at manageable levels and gradually increasing over time.

Exercise interventions of short duration (≤10 weeks) seemed to have a greater effect on mental health outcomes than those with a longer duration. Meta-analyses of exercise interventions offered to people with depression,[43,48] alcohol use disorder,[47] and severe mental illness,[57] found that programmes of shorter duration (≤10 weeks) were more effective for various mental health outcomes, quality

of life, and self-efficacy. The impact of the length of lifestyle interventions on physical health was unclear. Speyer and colleagues[56] found that the length of lifestyle interventions did not influence the effect on BMI. Lifestyle interventions likely require time to facilitate long-term changes in behaviours and, subsequently, in physical health outcomes. Although intensive interventions tend to have set timelines, ongoing support is necessary to sustain these changes.

Characteristics of the target population

Lifestyle interventions are beneficial in the early stages of illness, and for established and persistent illness. Interventions that target the early stages of illness present a crucial opportunity to prevent the deterioration of physical health. Speyer and colleagues[56] found similar effect sizes for lifestyle interventions on BMI by stage of illness (for prevention studies, k=8; PE=–0·56 kg/m²; for intervention studies, k=32; PE=–0·64 kg/m²). Fernandez-Abascal and colleagues[45] found large effects for lifestyle intervention on BMI and blood glucose during early psychosis (for BMI, k=2; g=–3·66; for glucose, k=1; g=–1·63). For other outcomes, there were large effects of lifestyle intervention on the Positive and Negative Syndrome Scale scores for schizophrenia (k=13; g=–0·79), a medium effect in first-episode psychosis (k=3; g=–0·55), and small non-significant effect in schizophrenia spectrum disorders (k=5; g=–0·27).[45] There was a large effect on negative symptoms in first-episode psychosis (k=3; g=–1·00), a moderate effect in schizophrenia (k=19; g=–0·52), and a small non-significant effect in schizophrenia spectrum disorders (k=3; g=–0·17).[45] Korman and colleagues[49] found a large effect of exercise intervention on global functioning in participants with early psychosis (k=2; g=0·80) and a small-to-moderate effect in persistent schizophrenia (k=15; g=0·36). Lifestyle interventions should be offered to all people who are engaged with mental health services, and not solely for the treatment of chronic physical health conditions.

Setting

There are benefits to providing lifestyle interventions in both inpatient and outpatient or community settings. A comparison of all meta-analyses that examined effects by setting showed mixed findings, but they were found to have beneficial outcomes across each treatment setting.[45–47,53,56–58] For example, Fernández-Abascal and colleagues[45] explored the effect of multiple lifestyle intervention elements for people with serious mental illness according to setting. The authors found no clear differences in effect for standard anthropometric or metabolic biochemistry measures apart from waist circumference, which was larger in an inpatient setting (k=3; g=–0·69) compared with an outpatient setting (k=10; g=–0·09).[45] In reality, people who receive support from mental health services should be offered interventions across all treatment settings to support their overall health, including physical health. Access to a gym or clinic-based exercise facility is important for both outpatient or community and inpatient services, given the potential for larger effects,[53] with home-based regimens potentially able to complement onsite facilities.

Panel 4: **Evidence-based recommendations from meta-research**

- Ground exercise interventions in one motivational theory. Include each component of the theoretical model, aim to foster autonomous intrinsic motivation, and avoid using controlled motivational strategies
- Offer both individual and group-based interventions that can cater to heterogeneous presentations in terms of age, gender, illness severity, readiness, and motivation to change
- Offer a range of intervention approaches that consider individual needs and preferences to improve adherence and reduce dropout rates
- Integrate health coaching, behaviour change techniques, and the foundational principles of motivational interviewing; this combined therapy can be delivered by upskilled exercise and nutrition practitioners, peer workers, or other health-care workers.
- Integrate exercise and nutrition specialists (with nationally or internationally recognised qualifications) into mental health services to increase effectiveness of lifestyle interventions and reduce dropout rates and train these professionals in mental health; in the absence of specialists, delivery by mental health clinicians and peer workers with additional support, supervision, and training, might be effective
- Start exercise interventions at a manageable level; focus on addressing barriers, consider open goals (based on Swann and colleagues;[62] open goals refers to non-specific, exploratory goals that are often phrased "See how well I can do…"), and progress intensity and frequency over time, ideally aiming for 3 or more times per week, and supervised where possible
- Lifestyle interventions should be prevention-focused and offered to everyone engaged with mental health services (and individuals with an eating disorder should be offered specialist eating disorder treatment); given the systemic health benefits, implementing these interventions early in the illness presents a crucial opportunity to prevent the deterioration of physical and mental health
- Offer lifestyle interventions in both inpatient and outpatient or community settings

Part 4: What are the barriers and enablers to the implementation and delivery of lifestyle interventions in mental health services?

Introduction

Lifestyle interventions that are delivered in mental health-care settings for people who live with mental

Panel 5: **Search strategy to identify factors that affect the implementation and delivery of lifestyle interventions in mental health care**

The MEDLINE, Scopus, PsychINFO, and CINAHL databases were searched with no language restrictions from Nov 1, 2018, to April 9, 2024 using (schizo* OR "mental illness" OR "mental disorder*" OR psychiatr* OR depress* OR bipolar OR anxiety OR "substance abus*" OR "'substance use'" OR "eating disorder*" OR psychosis OR psychotic).[Title/Abstract] AND ("physical activity" OR exercis* OR "resistance training" OR aerobic OR fitness OR diet* OR nutrition OR "weight" OR sleep OR insomn* OR smoking OR tobacco OR nicotine OR lifestyle*).[Title/Abstract] AND ((("semi-structured" OR semistructured or unstructured OR informal OR "in-depth" OR indepth OR "face-to-face" OR structured or guide) adj3 (interview* OR discussion* OR questionnaire*))).[Title/Abstract]. OR (focus group* OR qualitative OR ethnograph* OR fieldwork OR "field work" OR "keyinformant").[Title/Abstract].

	Providers' perspective	Participants' perspective
Macro	Broad structures that shape health-care delivery, such as policy, regulatory mechanisms, and demographics	External factors, such as policy, economic conditions (eg, recession), societal values, and cultural norms
Meso	Organisational factors, such as leadership, culture, resource availability, data systems, training, and organisational support	Social and environmental contexts affecting participants (eg, obesogenic hospital environments, stigma, limited resources, and community safety concerns)
Micro	Clinical team-level factors, such as knowledge of lifestyle interventions, familiarity with evidence base, motivation, and opportunities for action	Individual-level factors, including biological (eg, mental health symptoms and energy levels), psychological (eg, motivation and fear), and social or economic constraints

Definitions relevant to the providers' perspective adapted from Fulop and Robert.[66] Definitions relevant to the consumers' perspective developed for this Commission report and informed by Leyland and Groenewegen.[67]

Table 2: **Different system levels from the providers' and participants' perspectives**

illness are shaped by their intricate interactions with the rapidly changing contexts in which they are implemented and delivered, and the complexity of their multi-component structures.[64] Lifestyle interventions should not be seen as isolated events, but as dynamic components within the system that embraces the people involved, relevant policies and practices, and the underlying interactions (eg, patterns and processes) among these various components.[64,65] This section presents the findings of a qualitative synthesis of evidence of the factors that affect the implementation and delivery of lifestyle interventions in health-care settings for people with mental illness. The search strategy is presented in panel 5. Full details of the methods and results are in the appendix (pp 88–141).

We created two initial conceptual frameworks of the a priori themes corresponding to various system levels (macro, meso, and micro). One framework was for data that reflected providers' perspectives, and the other was for data that described the experiences and needs of people living with mental illness. We mapped the study data to various levels of the system to generate relevant themes. We used distinct definitions for the levels concerning providers and participants. Table 2 provides definitions and examples of the levels from the perspective of both providers and participants. More detailed descriptions of these different levels of the system are presented in the appendix (pp 90–91). We extracted and synthesised data on how lifestyle interventions should be delivered from the perspective of intervention participants. We also developed a tailored, best-fit framework from established theories and implementation and evaluation frameworks (appendix pp 114–115). We used this tailored, best-fit framework to synthesise data from studies focused on implementing lifestyle interventions in mental health-care settings.

Barriers to implementation and delivery

Macro-level barriers

Provider-related barriers at the health system level included inadequate reimbursement mechanisms,[68,69] impractical clinical guidelines,[70] and the challenges associated with delivering interventions in rural and low-resource settings.[71] No studies specifically addressed macro-level barriers from the perspective of participants.

Meso-level barriers

The most reported provider-related obstacles were a paucity of resources,[68–85] including time,[69,71,72,74–76,80–82] money,[70–72,75,79,82] infrastructure, equipment,[70–72,77,79] and training;[70,76,78,79,82,86] unclear roles and responsibilities;[70,87] and relative or competing priorities.[68,69,74,75,80,81,85,86] The latter included priority being afforded to conventional therapies such as pharmacotherapy.[68,71,72,75,80,81,86,88]

There were several participant-related barriers. One was insufficient support for participants to engage in activities (long term, in particular).[76,85,89] This issue stemmed, for example, from the discontinuation of interventions or changes in staff that reduced group cohesiveness, mental health stigma, and competing social norms (eg, using smoking as a means to socialise).[70,71,73,79,90,91]

Micro-level barriers

An absence of engagement of practitioners to deliver the interventions emerged as an important (and most frequently reported) barrier at the front-line team level.[74,75,79,81,91] This absence of engagement was attributed to some practitioners' scepticism regarding patients' abilities (eg, to understand interventions or to engage meaningfully with them),[72,74,76,80,81,83,86,87] scepticism regarding participants' motivation or interest to participate[79,80,87] (eg, due to staff perceptions that those who live with mental illness are difficult to support), or both.[86] It was also attributed to some practitioners' lack of awareness and knowledge of the value of lifestyle interventions.[68,71,75,88]

The most commonly reported participant-related barriers at the micro level that affected participants' ability to engage in lifestyle interventions were the nature of mental health conditions (low mood, social anxiety, side-effects of medication, and cognitive difficulties),[70,73,74,76,77,79,81,87–90,92–96] psychosocial factors (such as low confidence, poor body image, and little or no motivation),[73,74,87,89,90,93,94] and financial constraints.[70,71,73,76,77,79,94–97] Other frequently reported barriers at this level included not achieving sought intervention outcomes, which triggered feelings of failure;[74,76,97] scarcity of transport (eg, to get to the exercise venues);[79,93–95] or being unable to acquire appropriate clothing.[71,94] For the complete list of barriers that were identified in the studies, see the appendix (pp 115–118).

Implementation process

Studies that explore implementation do not reflect the proliferation of lifestyle interventions for people with mental illness that are delivered via mental health-care services. The examination of implementation processes intended to facilitate the scaling-up of lifestyle interventions within mental health-care settings is lacklustre. Few studies have been conducted in this area, and few were high-quality studies. More efforts to examine implementation, including thorough examinations of the implementation processes, are required.

Of the studies sampled, 23 (61%) of 38 specifically focused on the implementation of lifestyle interventions.[68,69,71–76,78–81,83,84,87–89,93,94,98–101] In five of these 23 studies, the implementation process was defined and described, differentiating it from the intervention itself.[68,73,84,87,93] Additionally, 11 of the 23 studies described the theoretical frameworks that underpinned the implementation processes.[68,73–75,79,84,87,93,99–101] However, few researchers reported the stages of their chosen implementation process or mapped the flows of resources, chains of responsibility (either individual or institutional), or transmission points for intervention recipients, such as the transition from one level of a multicomponent intervention to another.[68,73,87]

The studies reported various implementation outcomes (most frequently reported outcomes on appendix pp 122–124). In seven studies, evaluators considered which outcomes mattered to which stakeholders and why.[68,71,72,75,80,81,87] Details were provided on the implementation strategies that had been used in ten studies,[68,69,72–75,79,84,87,94] and descriptions of which strategies were thought to be effective were described in eight of these ten studies.[68,72,73,75,79,84,87,94]

Priorities for action by providers at each level of the system

Here, we offer actionable recommendations for providers to facilitate the implementation, adoption, and scaling-up of lifestyle interventions. The comprehensive list of recommendations is presented in the appendix (pp 121–124); a summary is provided in panel 6. These recommendations are considered adaptive, whereby mental health-care organisations draw inspiration from

***Panel 6*: Priorities for action by providers at each level of the system**

Macro level

- Engage external stakeholders (local, national, and international) from various sectors to facilitate support for best-in-class efforts that drive the implementation and delivery of lifestyle interventions (who to involve)
- Include collaborative governance, whereby the capacity for lifestyle interventions for people with mental illness is built through joint decision making and collaborative working (how to involve them and work together for a common goal)
- Where possible, ensure adequate funding, reimbursement mechanisms, and payment models; attract investment beyond the health-care system by applying for funding from charitable foundations and sponsors

Meso level

- Ensure strategic alignment between the integration of lifestyle interventions and organisational strategy, mission, priorities, and the target population
- Ensure that organisational-level policies support implementation and delivery efforts
- Build capacity for the implementation and delivery of lifestyle interventions, including the appointment of internal implementation leaders, members of staff whose sole role would be to address the physical health of participants, or those who would be able to dedicate a proportion of their time to the delivery of the interventions
- Champion and lead culture change (eg, mobilising leaders with the mandate to advocate for the integration of lifestyle interventions or advancing the steps that leaders should take to ratify the implementation of lifestyle interventions)
- Inspire action through education by dedicating resources and time to the education, training, and supervision of staff
- Install clear and flexible intervention processes that allow staff sufficient flexibility during implementation and intervention delivery to respond to local and individual needs
- Introduce coordination activities to support implementation efforts and ensure there is adequate capacity within the team to deliver them
- Use data and information systems to facilitate monitoring of the completion of intervention-related tasks (eg, physical health screening)
- Use digital systems to integrate lifestyle interventions into day-to-day care delivery (eg, through digital physical health screening forms that prompt referral to physical health professionals)
- Conduct ongoing monitoring and evaluation to help build confidence in intervention outcomes; the complex nature of the implementation and delivery of interventions in mental health-care settings necessitates a shift from a static, one-off evaluation, to continuous developmental evaluation that facilitates adaptations of interventions as they are being implemented
- Formally integrate qualified dietitians and exercise professionals into the interventions and implement job shadowing to facilitate learning in high-resource settings
- Use task shifting, the training of non-specialist workers to deliver lifestyle intervention, in low-resource settings
- Where applicable and desirable, engage patients' primary social ties (ie, family members and friends)

Micro level

- Foster a willingness and capability among staff to prioritise lifestyle interventions.
- Promote positive attitudes toward various methods of delivery of lifestyle interventions (eg, telehealth)
- Ensure that there is management support at the front-line team level; build collaborative learning communities (eg, interest groups)

Panel 7: Recommendations for implementation and delivery of lifestyle interventions in mental health services

Implementation

Strategic alignment

- Align priorities for integrating lifestyle interventions with organisational strategy: mission, priorities, and target population
- Develop organisational policies that support the effective implementation and delivery of these interventions

Processes

- Install clear and flexible intervention processes that allow staff sufficient flexibility during implementation and intervention delivery to respond to local and individual needs
- Introduce coordination activities to support implementation efforts and ensure there is adequate capacity within the team to deliver them
- Where feasible, ensure sufficient funding, reimbursement mechanisms, and payment models; attract investment beyond the health-care system by applying for grants from charitable foundations and sponsors
- Conduct ongoing monitoring and evaluation to build confidence in intervention outcomes; the complex nature of the implementation and delivery of interventions in mental health-care settings necessitates a shift from a static, one-off evaluation, to continuous developmental evaluation that facilitates adaptations of interventions as they are being implemented

Culture

- Champion and lead culture change through, for example, mobilising leaders with a mandate to advocate for the integration of lifestyle interventions or advance the steps that leaders should take to ratify the implementation of lifestyle interventions

Skills

- Inspire action through education by dedicating resources and time for staff training, supervision, and education
- Organise regular workshops and seminars for all staff members on lifestyle interventions and their implementation
- Build collaborative learning communities, such as interest groups
- Formally integrate the role of dietitians, exercise professionals, and smoking cessation specialists into mental health services and implement job shadowing to facilitate learning
- Ensure that exercise, nutrition, and smoking cessation specialists who provide lifestyle interventions receive foundational mental health skills training
- Use task shifting or delivery by upskilled lay members of the community in lower-resource settings
- Train mental health practitioners in the delivery of lifestyle interventions (eg, metabolic monitoring and lifestyle assessments)

Attitudes

- Foster positive characteristics and attitudes among the personnel who deliver interventions
- Foster a willingness and capability among staff to prioritise lifestyle interventions
- Promote positive attitudes toward different delivery methods for lifestyle interventions, such as telehealth

Implementation aids—facilities, tools, and technology

- Ensure appropriate facilities for delivering lifestyle interventions
- Provide tools for metabolic monitoring and lifestyle assessments
- Use the opportunities presented by telehealth and technology
- Use digital systems to integrate lifestyle interventions into day-to-day care delivery through for example, the use of digital physical health screening forms that prompt referral to physical health professionals
- Use data and information systems to facilitate monitoring of the completion of intervention-related tasks (eg, physical health screening)

Implementation aids—team capacity and capabilities

- Enhance staff capacity to support implementation and delivery efforts by appointing internal implementation leaders and multiple staff members, whose sole role would be to address the physical health of participants or who would be able to dedicate a proportion of their time to the delivery of the interventions
- Weigh the pros and cons of having current members of staff delivering lifestyle interventions versus employing new team members (eg, exercise professionals and dietitians)
- If practicable, offer staff an option to volunteer for the role rather than assigning them to deliver interventions, as this might facilitate ownership and commitment
- Allocate funding for new staff members who will deliver lifestyle interventions (eg, exercise professionals); if required, subcontract the delivery of interventions, or their elements (eg, physical activity sessions), to external providers
- Ensure that management support is available at the front-line team level

External support to enhance the success of implementation efforts

- Include collaborative governance, whereby the capacity for lifestyle interventions for people with mental illness is built through joint decision making and collaborative working
- Engage in proactive outreach and engagement efforts: engage external stakeholders from various sectors at local, national, and international levels to facilitate support for best-in-class efforts that drive the implementation and delivery of lifestyle interventions

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(Panel 7 continued from previous page)

Delivery

Components

- Offer routine metabolic monitoring and follow-up referral to relevant clinical services, in accordance with health service or national guidelines
- Implement multicomponent interventions that include, for example, physical activity, nutrition, and smoking cessation; encourage patients to choose options that meet their needs and preferences
- Integrate health coaching, behaviour change techniques, and the foundational principles of motivational interviewing; this approach can be delivered by upskilled exercise and nutrition practitioners, peer workers, or other health-care workers
- Empower participants through education

Delivery methods

- Offer lifestyle interventions in both inpatient and outpatient or community settings
- Integrate exercise and nutrition specialists into mental health services to increase effectiveness of lifestyle interventions and reduce dropout rates; in the absence of specialists, delivery by mental health clinicians and peer workers with additional support, supervision, and training, might be effective
- Start exercise interventions at a manageable level and increase over time, ideally to three or more times per week
- Offer both individual and group-based interventions that can cater to heterogenous presentation in terms of age, gender, illness severity, readiness, and motivation to change
- Create a safe environment to foster psychological safety
- Provide personalised and flexible services (eg, offer diverse intervention strategies tailored to individual needs and preferences)
- When applicable and desirable, involve the patient's primary social ties, such as family members and friends
- Value the importance of peer-led or peer-delivered lifestyle interventions
- Offer resources to support transitions to healthier lifestyles, such as free nicotine patches, transport for participants to the venue, and resources to support food security

Characteristics

- Provide the necessary support for participants to initiate and maintain lifestyle changes
- Lifestyle interventions should be prevention focused and offered to everyone engaged with mental health services
- Those with an eating disorder should be offered specialist eating disorder treatment

Crafting—key principles for success

- Ensure interventions are culturally responsive
- Ground exercise interventions in a single motivational theory and include each component of the theoretical model
- Aim to foster autonomous intrinsic motivation and avoid controlled motivational strategies (ie, non-self-determined or for external reasons, such as perceived approval)

successful efforts in other settings but tailor approaches to their specific contexts (eg, available resources). Adaptations might involve, for example, choosing a limited number of feasible recommendations to implement in a given setting rather than implementing them all.

Many countries are grappling with the effects of an absence of funding, or reduced funding for health-care services, specifically in mental health care. This calls for collective action with the government and local providers and for adopting approaches that consider and address factors at all levels of the system, including interactions and dynamics over time between various levels of the system. Such moves should pave the way towards the implementation of lifestyle interventions and their integration as part of routine health care; in turn, this should lead to better physical health of people with mental illness.

How lifestyle interventions can be implemented in ways that address the needs of people with mental illness

This section offers recommendations from the perspectives of people with mental illness to assist in the implementation and delivery of lifestyle intervention in a way that meets their needs. The synthesis generated nine themes. These themes highlight various factors that are important to individuals living with mental illness. Implementers should consider peer-led approaches, prioritise the creation of psychologically safe environments, and ensure that interventions are trauma-informed, flexible, and tailored to individual abilities, needs, and recovery goals. Practical delivery methods include offering choices between group and individual formats, providing access to sessions online, in person, or through a blended approach, and ensuring facilitators receive training in empathy and cultural sensitivity. The complete set of recommendations, based on findings from the qualitative evidence synthesis and consultations with lived experience groups, can be found in the appendix (pp 125–128).

Part 5: Recommendations for implementing lifestyle interventions in mental health services

Introduction

We generated actionable recommendations for implementing and delivering lifestyle interventions in mental health services in an iterative process. We first generated a list of recommendations based on the 2019 *Lancet Psychiatry* Commission.[1] We then independently virtually surveyed 10 members of the Global South Advisory Group (GSAG) and 8 members of the Lived Experience Advisory Group to generate relevance scores on each recommendation, ask for suggestions on improving each

recommendation, and report any recommendations that are missing. Additionally, we conducted a series of online focus groups with 8 individuals who live with mental illness and a virtual roundtable with all 14 members of the GSAG to discuss the findings from this Commission report and generate a narrative on their perspectives. Full details on the methods and results, including supporting quotes, are presented in the appendix (pp 116–133). The recommendations have been summarised in panel 7, with a narrative generated from the perspectives of people with lived experience.

Perspectives from people with lived experience

Although participants acknowledged the value of lifestyle interventions, they also acknowledged that the framing of lifestyle in this Commission report was narrow. The targeted nature was seen as overlooking many fundamental challenges to people's health and wellbeing. The effects of disadvantage, inequality, exclusion, and trauma throughout one's life, and intergenerationally, were frequently referred to as the most fundamental issues for people, and the root causes of unhealthy behaviours. Some participants believed these fundamental issues needed to be solved before other lifestyle options were considered, whereas others recognised the broad value of these approaches at all stages of an individual's journey.

Contributions from participants through the consumer and carer consultation process indicated that contextual and relational elements are crucial to the acceptability and accessibility of any programme, and incorporating these elements in programme design should be done purposefully. Those involved with supporting people with mental illnesses should foster empathic engagement and ensure appropriate interactions that respect self-determination, and services should work with communities and organisations to develop lifestyle programmes that facilitate community connection, a sense of belonging, and purpose. Coproducing programmes with the consumer group that the programme is intended to benefit is an essential first step in ensuring the appropriateness of such programmes, and governments have a responsibility to provide adequate resourcing for authentic coproduction and sustainable implementation of such programmes.

The importance of relational aspects of engagement to support autonomy and address the root causes of so-called unhealthy lifestyle behaviours was discussed with participants, who reflected on positive experiences of when this engagement was done well. Empathy was seen as a key ingredient, which comes naturally to some health workers. However, the experience of prejudice and discrimination in everyday interactions with health service staff was not uncommon and was described as particularly damaging.

Participants preferred health and wellbeing to be framed beyond a biomedical perspective, emphasising the importance of tailoring interventions to the diverse needs of target populations (eg, specific ethnic groups). Considerations for tailoring interventions included structural (eg, type of activity) and contextual (eg, social support) elements. Examples included women-only activities, codelivering interventions with community members, using convenient locations within the participants' communities, and adapting the content of intervention materials to their faith. Other priorities included holistic and emotional wellbeing concepts and trauma-informed framing. Group characteristics were seen as important for influencing group dynamics, but assumptions about individual preferences for group context should be avoided.

Funding challenges to programme longevity were discussed, and technology was suggested as a supportive programme feature that could enhance longer-term engagement. However, it was also acknowledged as problematic if used as a replacement for in-person engagement. Discussions about meso-level and macro-level considerations as to how services and government should support lifestyle programmes related to two main categories: enabling programme development and long-term implementation with communities, supported by appropriate policies and funding support for implementation; and integration and collaboration with communities to collectively address these issues in the most appropriate and beneficial ways.

Considerations for Global South contexts

Even without consideration of lifestyle interventions, access to standard mental health treatment is unequal across countries based on income status.[102] In high-income countries, only one in five people receive minimally adequate treatment for depression. This statistic is even worse in low-income and middle-income countries, with only one in 27 people receiving adequate treatment. In many Global South contexts, high costs and inequitable access to services might result in people seeking alternative care from, for example, religious leaders or traditional healers.[103] Further, there is a prevailing gap in mental health-care capacity in rural areas compared with urban areas.[104] Several factors should be considered for effective lifestyle interventions to be sustainably implemented and scaled up in mental health services across countries considered part of the Global South. These include resource availability, the potential for task shifting or delivery by lay members of the community (ie, not only by specialists or clinicians), and the possibility of using other community resources, such as existing mental health programmes. Addressing macro (system), meso (organisational), and micro (front-line service, individual) level barriers will require engaging policy makers, organisational leaders, clinical staff, people with lived experience, and community leaders (eg, religious leaders and traditional healers) in the cocreation and codevelopment of lifestyle interventions. Engaging

stakeholders beyond the health-care system will allow for culturally responsive and acceptable lifestyle interventions while fostering sustainable implementation across mental health services. The asymmetry in evidence for the Global South compared with the Global North means there is an urgent need for Global South research to ensure that the allocation of funds matches population needs.[105]

Conclusion

Mental health services need to prioritise evidence-based lifestyle interventions to generate systemic health benefits for people living with mental illness. The growing recognition of the need for lifestyle interventions in mental health care in national and international guidelines and from leading organisations such as the World Psychiatric Association creates an opportune time for change. Our Commission report provides recommendations for the implementation and delivery of lifestyle interventions in mental health care, where delivery elements are known to be more effective and complement implementation and delivery strategies to manage feasibility, acceptability, and sustained engagement. This work accompanies the partner *Lancet Psychiatry* Commission report on physical health related to optimal pharmacological prescribing.[106]

Although the available evidence in this Commission report relates to physical activity, nutrition, tobacco smoking cessation, and sleep, lifestyle interventions in mental health care should not be limited to these factors. Interventions are needed to target other elements, such as sedentary behaviour and stress management. Furthermore, a key critique is that lifestyle interventions emphasise individual behaviour change (eg, diet, exercise, and stress management) while underestimating structural barriers, such as poverty, education, housing, and systemic inequalities, that profoundly affect health. Lifestyle interventions should be considered alongside upstream factors such as income inequality, unsafe neighbourhoods, food deserts, and food insecurity, or a lack of access to health care, which substantially influence health behaviours.

Lastly, the disparity in published articles from the Global South likely represents a combination of an absence of lifestyle interventions delivered in these regions and little opportunity to publish findings. This disparity is concerning given that much of the global burden lies in these regions and speaks to the broader inequalities experienced in the Global South. Creating opportunities to implement and report on lifestyle interventions in the Global South will generate a greater understanding of the implementation and delivery needed in these locations.

The *Lancet Psychiatry* Physical Health Commission Report Consortium members

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