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Keeping the Body in Mind-Primary: evaluation of a community-based lifestyle intervention for people with severe mental illness accessing primary care

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ABSTRACT

Background. People living with severe mental illness face increased risk of physical multimorbidity and early death, yet primary care settings – where much of this population receive their care – do not provide adequate physical health support. Here, we evaluate a community-based lifestyle intervention for people living with severe mental illness accessing primary care. The intervention was commissioned by a Primary Health Network and participants were referred through primary care providers. We aimed to determine factors influencing implementation and participant adoption of the intervention, and to assess its effectiveness in improving participants' physical health. **Methods.** A prospective mixed methods evaluation was conducted between March 2021 and October 2023 using semi-structured interviews with intervention clinicians, referrers and participants, and pre-post physical activity and dietary outcome measures. **Results.** Enhanced accessibility (offering the service in a hybrid format and free of cost) and ensuring the service was multidisciplinary and mental health informed were implementation strategies that alleviated barriers to attendance. Close collaboration with referrers was important for engagement, but making and maintaining contact with general practitioners proved challenging. Low participant uptake highlighted a need for additional engagement efforts. Data suggest the service may improve participants' physical health. **Conclusions.** Lifestyle interventions in primary care are feasible to implement and may improve physical health, but additional efforts are needed to improve collaboration with primary care referrers and general practitioners to support with implementation of physical health interventions for people living with severe mental illness.

Keywords: health behaviour, lifestyle intervention, mental disorders, physical health, primary health care, psychotic disorders, serious mental illness, severe mental illness.

Introduction

People living with severe mental illness (SMI) face increased risk of chronic physical multimorbidity, contributing to a 12–15-year reduced life expectancy compared with the general population (Lawrence *et al.* 2013). Behavioural lifestyle interventions targeting nutrition and exercise are effective in mitigating weight gain, reducing metabolic risk and improving mental illness symptomology; yet despite these benefits, people with SMI face significant barriers to accessing physical health supports (Teasdale *et al.* 2025).

An evidence-based lifestyle intervention offering exercise, nutrition, smoking cessation and health coaching is embedded within a large Sydney public mental health service. The intervention was shown to be effective in attenuating anti-psychotic-related weight gain among young people experiencing first-episode psychosis, and now forms part of routine care for youth and adult service users (Curtis *et al.* 2024). Unfortunately, people with SMI who receive care in primary care settings are not eligible to access the intervention.

Although general practitioners (GPs) are in regular contact with people living with SMI, physical health is often overshadowed due to time constraints and competing pressures.

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This highlights a need for simple referral pathways, where GPs can refer clients for targeted physical health support similar to that offered within the public mental health system (Marx *et al.* 2023). Global evidence – including the Lancet Psychiatry Commission (Teasdale *et al.* 2025) – suggests multidisciplinary, community-based lifestyle interventions should be integrated into primary health care through efficient referral pathways to address physical health disparities.

In 2021, a Primary Health Network funded the adaptation and implementation of the public mental health service-based intervention into a community-based setting. Literature around the implementation of lifestyle interventions in these settings is lacking (Deenik *et al.* 2020). Thus, the primary aim of this study was to determine factors influencing implementation and adoption of the intervention, through the perspectives of participants, clinicians and referrers. The secondary aim was to assess the effectiveness of the intervention in improving the physical health of participants.

Methods

Study design

A prospective mixed methods service evaluation was conducted between March 2021 and October 2023. This study was approved by the UNSW Human Research Ethics Committee (HC210377), and is reported according to the Standards for Quality Improvement Reporting Excellence (SQUIRE 2.0) and Consensus Reporting Items for Studies in Primary Care guidelines (see Supplementary Table S1) (Ogrinc *et al.* 2016; Phillips *et al.* 2023). This evaluation was conducted by a multidisciplinary research team with backgrounds in implementation science, exercise physiology, psychiatry, dietetics, peer work and nursing, and experience working in primary care settings. A waiver of consent was approved for use of routine clinical data for this study. All interview participants signed a participant information sheet and consent form prior to an interview.

Setting

The intervention was established in March 2021 within a university-based, public-facing exercise physiology teaching clinic in Sydney. The clinic specialises in the prevention and management of chronic disease, injury and disability, and is equipped with consult rooms and comprehensive exercise facilities. The intervention team comprised an exercise physiologist (EP), holding a Bachelor of Exercise Physiology and accredited with Exercise and Sports Science Australia, and a practising dietitian with a Masters in Nutrition and Dietetics, accredited with Dietitians Association of Australia. Both clinicians had prior clinical experience supporting people with SMI and completed trauma-informed mental health training before commencing their roles. Due to funding arrangements, the EP delivered the intervention for the full 31-month evaluation period, and the dietitian was engaged for 27 months.

During establishment of the program, the intervention team provided outreach to GPs through phone calls, emails and flyers. The funding body also provided information about the program through their primary care networks. GPs were initially relied upon for referrals, but low referral rates led to similar outreach efforts to allied health practitioners and non-government organisations. Referrals were made using an online REDCap form (Harris *et al.* 2009). Upon referral receipt, the intervention team contacted referred participants.

Participants

Program inclusion criteria included people: (1) aged between 18 and 65 years; (2) with a diagnosis of a SMI (schizophrenia, schizoaffective disorder, bipolar disorder or major depressive disorder), or who were prescribed a psychoactive medication with cardiometabolic risks; (3) who were not receiving care from a public hospital mental health service; and (4) were living in the catchment area specified by the funding body. The EP screened those referred into the exercise component for contraindications to exercise using the Adult Pre Exercise Screening System (Norton 2012). If participants failed screening, the EP sought medical clearance from the participants' GP before commencing sessions.

Intervention description

The intervention offered exercise and nutrition support through a hybrid approach: telehealth, and in-person at the university clinic. The intervention was delivered over multiple sessions, representing a short-term longitudinal care model. The EP and dietitian each offered a 1-h intake session to perform baseline assessments, eight 1-h clinical sessions and one 1-h discharge session. When clinically necessary, the clinicians would offer additional sessions; for example if the participant was experiencing fluctuations in their mental or physical health upon discharge. Although the nutrition and exercise interventions were delivered independently of each other, they could be delivered concurrently. Frequency of sessions and the timeframe from initial session to discharge was determined pragmatically with the participant.

The interventions were delivered in line with Australian Government guidelines (Australian Government Department of Health and Aged Care n.d.; National Health and Medical Research Council 2013), and were individualised based on participants' clinical needs and goals. Initial EP assessments involved examining family history using the standardised Australian Diabetes Risk form (Chen *et al.* 2010; completed at baseline only), comorbidities, readiness to change, current and previous exercise levels, and fitness testing and goals. The EP subsequently provided structured exercise prescription and motivational interviewing to support participants. Initial

dietary assessments involved collecting metabolic biochemistry and diet history, determining readiness to change, and establishing goals. Subsequent sessions involved individualised dietary education and motivational interviewing to support behaviour change. Both clinicians supported capacity building for ongoing autonomous exercise and balanced nutrition upon discharge, including supporting access to external community-based exercise services, or a GP for a management plan.

Outcome measures

A process evaluation was conducted, assessing the time from referral to initial assessment, number of people that completed the program and attrition. Completers were defined as those that undertook a minimum of eight sessions or had a formal discharge session.

Factors influencing implementation were explored through semi-structured interviews. All participants and referrers were invited to participate in interviews; those that opted in were interviewed upon completion of the participant's program. Interviews were conducted with four intervention clinicians, eight participants and four primary care referrers (GP, psychologist, support worker, nephrologist) over Microsoft Teams or in-person; were 30–40 min in length; and were video and audio-recorded, and transcribed using Microsoft Teams. The interviews followed a narrative inquiry approach, where participant perspectives were explored through stories of personal experiences and cultural context (Clandinin and Connelly 2004). The interviewer asked open-ended questions, and participants were encouraged to steer the discussion with their experiences. The interview questions explored the evolution of the service, barriers and facilitators to participation, and the provision of physical health care.

Pre-post effectiveness measures included the Simple Physical Activity Questionnaire, an 8-question questionnaire validated for use with people with mental illness that examines self-reported weekly physical activity (Rosenbaum *et al.* 2020); and dietary intake measured using a 24-h recall estimating serves of: (1) fruit and vegetables, (2) discretionary food, and (3) total energy intake (kilojoules). The 24-h recall method is a recognised method for assessing dietary intake in studies involving people with mental illness (Teasdale *et al.* 2019). The dietitian probed participants about all food and beverages consumed in the past 24 h using props including cup measures and National Health and Medical Research Council portion size guides (National Health and Medical Research Council 2013). The data were analysed via food group analysis, with servings of fruit and vegetables, discretionary food, and total energy intake categorised according to National Health and Medical Research Council guidelines (National Health and Medical Research Council 2013). Assessments were conducted during a participant's first appointment and upon completion of their program. Final assessment data were included in this study if completed on or before a 14th session (as some participants who needed extra support undertook additional sessions).

Data analysis

Interview transcripts were checked for errors, and personal identifiers were replaced with pseudonyms. Two members of the research team analysed interview transcripts using thematic analysis (Byrne 2022); ED and LC independently read and re-read the transcripts line-by-line, and inductively assembled broad codes, then refined these to produce themes. A third senior researcher (HF) reviewed the themes before final themes were determined. Data analyses were performed using the qualitative analysis software program NVivo 12 (Lumivero).

Diagnosis and age were obtained from referral forms. Sex and Aboriginal or Torres Strait Islander status were obtained from the Australian Diabetes Risk form. Sex, diagnosis and Aboriginal or Torres Strait Islander status were reported as number and percentage of the total sample. Age was reported as the mean and standard deviation. Data for pre–post analysis was assessed using paired sample *t*-tests with a Bonferroni's correction applied for multiple statistical tests. As five measures were taken for exercise and three for diet, results were significant for exercise if $P \leq 0.01$ and for diet if $P \leq 0.017$ for paired sample *t*-tests using a Bonferroni's correction. Data analysis was conducted using SPSS, version 27.0 (IBM Corp 2020).

Ethics approval

This study was approved by the UNSW Human Research Ethics Committee (HC210377).

Results

Process evaluation

Fig. 1 outlines the participant journey. The intervention received 123 referrals between March 2021 and October 2023. Referrals came from 77 unique referrers, the majority from GPs (61%). Thirteen referrals (11%) did not meet the inclusion criteria, so were not accepted. Of the 110 accepted referrals, 96 were for both clinicians, 11 for EP only and 3 were for dietitian only.

The mean age of those referred was 39 years (s.d. 13.1). Additional demographic details are outlined in Table 1. Fifty-eight referred participants (52%) had at least one appointment with the EP, 48 (43%) with the dietitian and 40 (36%) with both. Fifty-two (47%) did not engage with the intervention at all. The median number of days between referral and initial EP appointment was 22 (n = 53, IQR: 14–44), and between referral and initial dietitian appointment was 94 (n = 45, IQR: 51–163.5). Forty (69%) people who

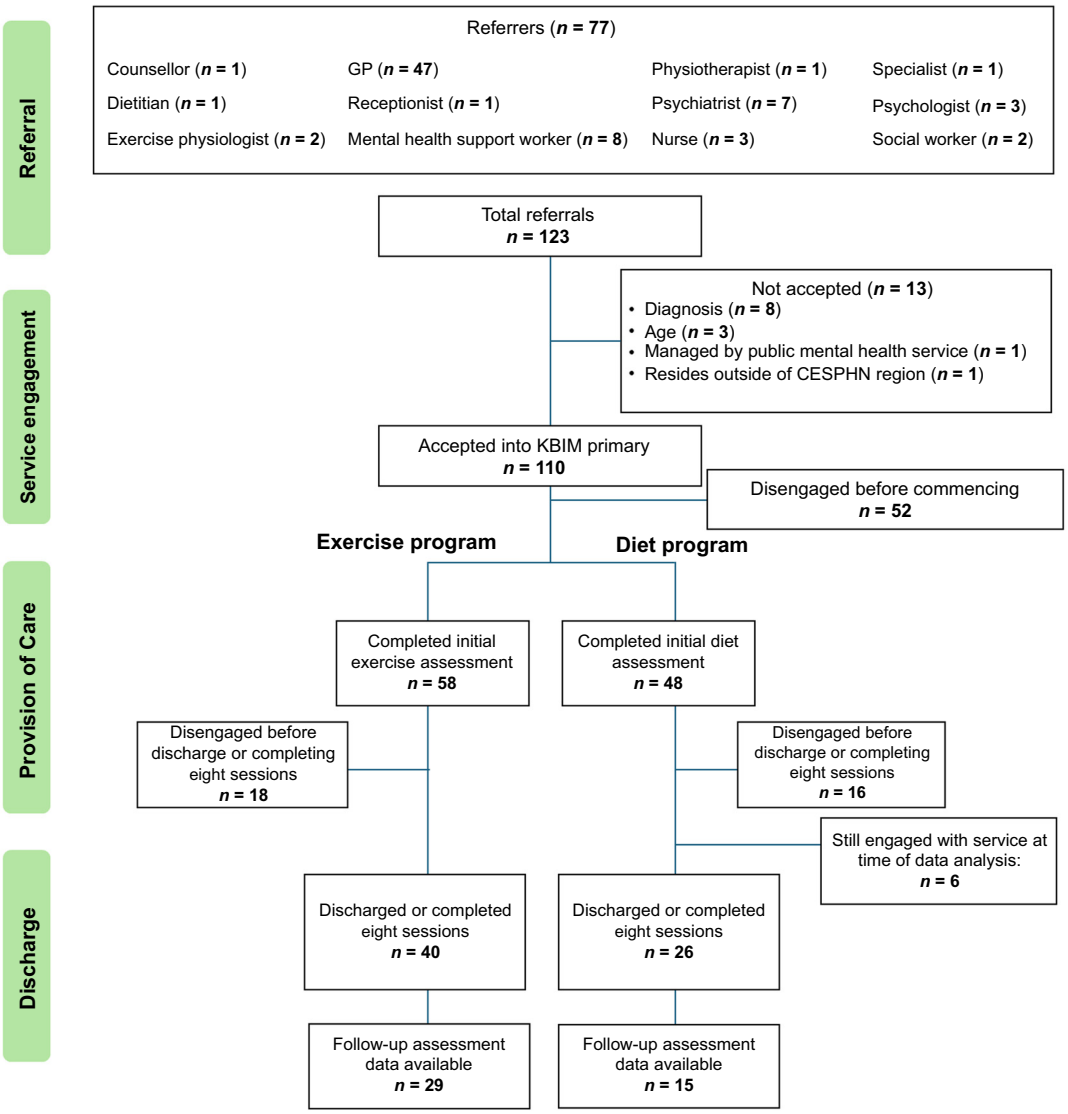

Fig. 1. Flow of participants through the intervention.

engaged completed the exercise program, and 26 (54%) people who engaged completed the dietetics program – six (12%) remained engaged with the dietitian at the time of analysis. The median number of sessions attended by those that completed the exercise physiology component was 12 (n = 40, IQR: 10–16.5), and the mean number of sessions attended by those that completed the dietetics component was 9.5 (n = 26, s.d. 2.52). The median number of sessions attended by those that dropped out was two (n = 18, IQR: 1–4) with the EP and 2.5 (n = 16,IQR: 1.25–5) with the dietitian.

Qualitative findings

Sample description

Four intervention clinicians, eight participants and four referrers (GP, psychologist, support worker, nephrologist) were interviewed between February 2022 and October 2023. Thematic analysis revealed four themes relating to implementation: (1) accessibility, (2) a mental health-informed service, (3) importance of multidisciplinary support and collaborative care, and (4) improved quality of life and health.

Accessibility

Several participants reported financial constraints as a barrier to engaging in exercise, cancelling gym memberships, because '. . . it was actually kind of breaking the bank' (Participant 7), and '. . . it was quite expensive' (Participant 8). Intervention clinicians and referrers also spoke to the unaffordability of allied health professionals and conventional gyms, and the benefit of a free intervention:

> Most of the time, they can't afford it. If you have a chronic mental health disorder, you're often on Centrelink payments or a disability pension and absolutely no way

Table 1. Demographic details at intervention intake.

Demographic and clinical details	Total referred (n = 110)	
Mean age (years)	39.0 (s.d. 13.1)	
Sex, *n* (%)	Female	45 (41%)
	Male	32 (29%)
	Unknown	33 (30%)
Diagnosis, *n* (%)	Schizophrenia	11 (10%)
	Schizoaffective disorder	10 (9%)
	Bipolar	31 (28%)
	Major depressive disorder	50 (46%)
	Other	8 (7%)
Aboriginal or Torres Strait Islander status, *n* (%)	Yes	6 (6%)
	No	72 (65%)
	Unknown	32 (29%)
Referred to exercise physiologist, *n* (%)	107 (97%)	
Referred to dietitian, *n* (%)	99 (90%)	

they can pay privately to see someone longer term. (Referrer 1, GP).

I've got quite a few participants that are food insecure. Might have a weekly food budget of A$50 and don't have the kind of financial capacity to be able to spend on an allied health professional. (Intervention clinician 1)

Although several clinicians and referrers preferred face-to-face delivery for assessing participants' health and providing deeper social connection, they acknowledged telehealth offered flexible scheduling, attracted a wider cohort (e.g. those experiencing social anxiety or who prefer online services), and allowed for continuity during fluctuations in energy levels or mental health. Intervention clinician 1 spoke to the benefits of easing someone into the program, starting '... with a telephone call and [progressing] to zoom, and then it might even be that they'd progress to in-person', and how telehealth can support someone's '... capacity that week ... they might not want to leave the house that day and they can literally just call up on their phone'.

Participants expressed diverse preferences for face-to-face and telehealth. Some experienced difficulties using or accessing technology, or preferred the social aspect of face-to-face appointments. Participant 3 described telehealth as impersonal, noting 'face-to-face is always better'. Others found telehealth more accessible and preferred the convenience; Participant 4 commented on enjoying a slow progression from phone calls initially, '... and over a few weeks ... we started the zoom meeting, and I enjoyed that'.

A mental health-informed service

Interviewees emphasised physical health interventions for people with SMI should be mental health-informed and delivered by mental health-trained clinicians. Several participants built strong relationships with the clinicians, and attributed this to their judgement-free approach and understanding of mental health. Participant 1 commented on the EP's approach, noting '... he's very caring as well and has a lot of patience. And he seems to understand about mental illness as well, not just the fitness side of it, which is what I like the most'. Participant 6 also noted when clinicians understand mental illness it '... makes me feel safer, it makes me feel more comfortable. Knowing that you know, and I don't have to hide from myself'.

Referrers and intervention clinicians associated mental illness symptoms (such as forgetfulness, lack of motivation, anxiety) with last-minute cancellations and decreased engagement. They stressed the importance of additional supports to account for these issues, and praised the intervention for its flexible appointment scheduling, accountability through personable check-ins and reminders, and 'go at your own pace' programming. Intervention clinician 2 commented on their strategy, noting 'I would definitely just give them a call, check-in and see how they are. I guess taking more of that empathetic approach ... it's not just as simple as showing up for an appointment, especially in this area. And I guess just offering appointments like in a couple of weeks or when they're feeling a little bit better'.

Participants agreed lack of motivation and mental health struggles impacted their attendance, and praised the program's adaptability to these struggles. Several benefited from the clinician's gentle approach and individualised programming. Participant 4 reflected on the dietitians recommendations, how they would 'always [suggest] very gently ... do it and see if it happens. It's just a suggestion'.

Importance of multidisciplinary support and collaborative care

Interviewees acknowledged having multiple clinicians within the service both increased participant access to varied specialist care and helped encourage attendance. Intervention clinician 1 described how '... in that 1 week, there's two health professionals that are kind of reinforcing a certain positive message'. Participant 1 echoed this when discussing their support worker, the intervention EP and the intervention dietitian, noting '... I had three people that would constantly [be] reminding me to exercise'.

Similarly, ongoing communication between the intervention team and referrers assisted with engagement. Referrer 2 (psychologist) noted 'That other communication avenue with the incoming clinicians was actually vital ... even if it's very brief, to have a sense of collegiality was I think a vital part in actually pushing this person through the process'. However, some interviewees found communication with GPs challenging; Intervention clinician 3 noted some practices '... don't have phones or they won't provide emails for a professional to be able to communicate with their GPs on an individual basis'. Several interviewees encouraged seeking

referrals elsewhere (e.g. at psychologists and psychiatrists). Referrer 4 (support worker) highlighted the benefit of referrals coming directly from other practitioners like support workers: 'I'm happy ... [to] get [the referral] to the GP, but often it's going to delay everything because your GPs are so busy ... I can try my best to fill out all the medical history and medication from my end if you are happy for that'.

Interviewees also offered strategies to engage GPs and other potential referrers. Intervention clinician 2 recommended in-person outreach 'when we initially go to provide information on the service. If we do that in person, that might be more memorable in their mind', and suggested '... constantly calling, like every couple of months or so, rather than just calling once and leaving it' to ensure the program remains front of mind for referrers. Intervention clinician 2 also emphasised the benefits of showcasing the services' results in addition to outreach, suggesting '... getting some consumer feedback for the program out there ... [as] sometimes we would call the GPs but ... they're very time poor'. This was reiterated by Referrer 3 (nephrologist), who stated '... a critical mass of clients and patients ... will feed back to general practice. They'll go back to the GP and say "so I've been and the service is really, really good"'.

Improved quality of life and health

Interviewees offered positive feedback about the program, noting enhanced mood and energy levels, increases in exercise and general activity levels, and improvements in diet quality among participants following the program. Several participants felt more confident and autonomous in managing a healthy lifestyle; clinicians and referrers also observed these improvements. Participant 4 reflected 'since last October I've lost 10 kilos, and I think you know, and [the dietitian] certainly has had a lot of input into that because of helping me to understand mood, and how my mood is affected by me not eating properly and regularly ... it's just made a big difference to my overall, you know, holistic wellbeing'.

Intervention clinicians found the service an important social outlet and support system for participants. Participants noted this too; Participant 5 discussed how the clinicians were '... another person that's there in your journey as well ... I already see the benefits of physical exercise, but sometimes, especially in the days of darkness, it's good just to have a hero from somebody else'. Many participants felt advocated and cared for, and believed this helped with improving their health.

Service effectiveness

Statistically significant improvements were observed in exercise and dietary measures at follow up. For participants that completed final exercise assessments (n = 29), mean time spent sedentary per day decreased by 1.1 h (95% CI: −1.7 to −0.5, $t(28) = -3.7$, $P = 0.001$), mean minutes of light exercise per day increased by 20.1 min (95% CI: 12.9 to 27.3, $t(28) = 5.7$, $P < 0.001$), mean minutes of moderate to vigorous exercise per day increased by 16.3 min (95% CI: 12.1 to 20.4, $t(28) = 8.1$, $P < 0.001$) and mean minutes of incidental activity per day increased by 32.8 min (95% CI: 8.8 to 56.8, $t(28) = 2.8$, $P = 0.009$). For those that completed final dietary assessments (n = 15), mean serves of fruit and vegetables increased by 2.9 serves per day (95% CI: 1.2 to 4.6, $t(14) = 3.7$, $P = 0.002$). Mean decrease of 2.3 serves per day of discretionary foods was observed, which was not statistically significant (95% CI: −4.7 to 0.1, $t(14) = -2.1$, $P = 0.05$). There was no significant difference in energy intake between pre- and post-measures. Full details on pre- and post-measure analyses are presented in Table 2.

Discussion

This evaluation of a community-based lifestyle intervention offers valuable insights informing opportunities for improving primary care physical health supports for people with SMI. Our findings suggest the intervention was feasible to implement; however, participant uptake of initial sessions and full participation in the program were low. Effectiveness data indicate the program may have improved participants' physical health, showing decreases in time spent sedentary, increases in light, moderate to vigorous and incidental exercise, and increases in serves of fruit and vegetables per day. These results align with studies investigating the intervention in the public mental health service, which showed improvements to physical health among participants (Curtis *et al.* 2024).

Thematic analysis identified key strategies necessary for implementation, including tailored interventions and collaborative, multidisciplinary care for managing physical health in this population group. This aligns with policy calls for better service integration and improved referral pathways to physical health care for those not accessing public mental health services. The Lancet Commission notes inter-service collaboration is essential for addressing overshadowing of physical health issues for people with SMI across health settings, including primary care (Firth *et al.* 2019). The Royal Australian College of General Practitioners also calls for improved collaborative care and coordination between general practice, mental health and physical health services (Royal Australian College of General Practitioners 2023), as poor inter-service collaboration is not uncommon. This was observed within the intervention – when adequate collaboration between referrers and the intervention team occurred, quality of care and engagement levels increased; however, often the clinicians experienced challenges making and maintaining contact with GPs. The discrepancy between high GP referral numbers and low engagement during implementation suggests broader integration challenges. These may reflect misaligned expectations, limited co-design and systemic communication barriers, such as restrictions on email use for

Table 2. Pre–post effectiveness measures for people that completed the exercise and dietary intervention.

Measure	*n*	Mean (s.d.) initial	Mean (s.d.) follow up	Mean change initial to follow up (95% CI)	Paired samples *t*-test initial to follow up
Exercise measures					
Hours in bed per night	29	9.66 (2.13)	9.47 (1.50)	−0.19 (−0.78 to 0.40)	$t(28) = -0.66$, $P = 0.517$
Hours sedentary	29	12.10 (2.87)	11.05 (2.76)	−1.06 (−1.65 to −0.47)	**$t(28) = -3.66$, $P = 0.001$**
Minutes of walking and light exercise	29	34.48 (29.20)	54.59 (29.89)	20.10 (12.89 to 27.32)	**$t(28) = 5.71$, $P < 0.001$**
Minutes of moderate to vigorous exercise	29	3.45 (9.46)	19.72 (16.70)	16.28 (12.14 to 20.41)	**$t(28) = 8.06$, $P < 0.001$**
Minutes of incidental exercise	29	98.79 (156.88)	131.55 (165.04)	32.76 (8.75 to 56.77)	**$t(28) = 2.80$, $P = 0.009$**
Dietary measures					
Fruit and vegetables	15	3.00 (1.70)	5.90 (1.94)	2.90 (1.24 to 4.56)	**$t(14) = 3.74$, $P = 0.002$**
Discretionary	15	4.17 (4.03)	1.85 (1.74)	−2.32 (−4.68 to 0.05)	$t(14) = -2.10$, $P = 0.054$
Total daily intake (kj)	15	7501.67 (3221.60)	7888.33 (2566.37)	386.67 (−1875.64 to 2648.97)	$t(14) = 0.37$, $P = 0.719$

Significant *t*-tests are highlighted in bold text.

clinical correspondence (as outlined in Royal Australian College of General Practitioners protocols). Co-location (Firth *et al.* 2019; Tabvuma *et al.* 2022) and/or service coordination roles (Parker *et al.* 2023) – such as a peer navigator role – are recommended solutions for improving inter-service collaborative practice.

Offering the intervention at no cost helped alleviate significant financial barriers that commonly prevent people with SMI from accessing physical health services. Reduced income is a well-documented barrier to engaging in exercise and maintaining a healthy diet in this population, and policy frameworks consistently call for reducing the financial burden on individuals. This can be achieved through integrated care systems and collaborative models that provide access to multidisciplinary teams in a single setting (Firth *et al.* 2019).

Importantly, this intervention offers GPs a time-efficient referral pathway for addressing the physical health needs of patients with SMI, potentially reducing clinical burden and enhancing care coordination. Its flexible referral process and hybrid delivery format suggest broad applicability across diverse primary care settings, including those with limited in-house allied health capacity. These features support scalability and relevance in real-world primary care environments, aligning with priorities for accessible, integrated care.

System-level impacts, including the COVID-19 pandemic, may have affected participation. The pandemic significantly disrupted GP operations, and under tight resource constraints led to GPs prioritising vaccination delivery (Wright *et al.* 2022). This likely contributed to reduced engagement and responsiveness to outreach efforts during the intervention period. To maximise attendance during the pandemic, the service was implemented in a hybrid telehealth and face-to-face format. Data showed preference for ongoing hybrid delivery. Similarly, other studies highlight the benefits of the hybrid format in increasing accessibility while allowing face-to-face contact to account for difficulties with technology or preference for in-person interactions (Kopelovich *et al.* 2021). Additional research on feasibility and acceptability of telehealth and/or hybrid physical health interventions is needed.

The social aspect of the service was important for engagement. Positive socialisation is beneficial for engaging people living with SMI in exercise interventions, and can improve socialisation skills and reduce mental illness symptom severity (Tomlinson-Perez *et al.* 2022). Social support from peers through group work is particularly effective for reducing motivational barriers to engagement faced by this demographic (Koomen *et al.* 2022); however, the intervention did not offer group sessions.

Limitations and future directions

Approximately half of those referred to the service engaged, and many who initially participated disengaged after only a few sessions. Barriers to engagement at the individual, service and societal levels are well-documented in mental health care, and low uptake of exercise services for people with mental illness is common in routine practice (Tomlinson-Perez *et al.* 2022). The COVID-19 pandemic likely influenced referral patterns and reduced the capacity of primary care providers to engage with new services, limiting the intervention's reach and integration. Additionally, reduced service capacity – particularly the delayed onboarding of the dietitian compared with the EP – may have impacted participant engagement in the early stages of the intervention.

Rapport building is crucial for engaging this population in physical health care. Evidence suggests that employing a mental health peer worker, especially during the early stages of an intervention, could support engagement (Bochicchio *et al.* 2019). Group-based formats may also enhance social connection and motivation (Tomlinson-Perez *et al.* 2022), although this intervention did not include group sessions.

Only participants who completed the program were recruited for interviews, meaning the perspectives of those who disengaged were not captured. Future evaluations should explore specific reasons for low uptake and early disengagement. There was potential for recruitment bias in the qualitative component, as participants with strong affinity for the service may have been more likely to participate. Importantly, this evaluation did not investigate intersectional implementation factors. Future research should explore barriers and facilitators for culturally and linguistically diverse, LGBTQIA+, and Aboriginal and Torres Strait Islander communities to ensure equitable access and relevance.

Furthermore, this study lacked a control group, limiting generalisability. Effectiveness measures were collected by clinicians delivering the intervention, introducing potential bias. Data collection was also inconsistent due to the flexible, person-centred nature of the program and clinical appropriateness of assessments, particularly during COVID-19 lockdowns. As a result, some follow-up data were excluded from this study.

Although post-intervention feedback was collected, the intervention was not co-designed with primary care stakeholders, and the research team did not consist of any GPs. This may have limited insights into GP engagement and integration. Future implementations should incorporate early-stage collaboration with GPs and community members to ensure alignment with clinical workflows, referral practices, and patient needs.

Conclusions

This evaluation of a novel primary care lifestyle intervention for people with SMI identified several implementation strategies that helped overcome common barriers to attendance, including enhanced accessibility through hybrid delivery and no-cost participation, and a multidisciplinary, mental health-informed approach. Collaboration with referrers was essential for engagement, although challenges establishing and maintaining contact with GPs limited reach and uptake. Low participant engagement, particularly at the start of the intervention, highlights the need for stronger early-stage outreach and co-design with primary care stakeholders.

Preliminary data suggest the intervention may improve physical health outcomes for participants, supporting its potential value in primary care settings. However, broader integration will require attention to system-level coordination, stakeholder involvement and cultural responsiveness. These findings offer practical insights to guide future efforts in embedding accessible, multidisciplinary physical health services for people living with SMI.

Supplementary material

Supplementary material is available online.

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