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Embedding exercise interventions as routine mental health care: implementation strategies in residential, inpatient and community settings

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Abstract

Objectives: Evaluation of physical activity (PA) programs among populations with severe mental illness (SMI) has predominately focused on efficacy and therapeutic benefits. There is now strong evidence to support the benefits of PA in people with SMI. What remains is a gap in the implementation of pragmatic and sustainable PA interventions in mental-health settings. The current paper provides examples of interventions that have been successfully implemented in Australian settings, identifies key components of successful PA interventions and outlines practical strategies that can assist with widespread implementation of PA interventions in mental-health settings.
Conclusions: There is an emergence of PA interventions being imbedded within a variety of mental-health settings. These interventions vary in terms of mode and intensity of service delivery. Yet, all aim to increase PA and reduce sedentary behaviour. Adopting the identified strategies may help facilitate successful implementation and increase access to PA interventions for mental-health service users.

Keywords: physical activity, exercise, mental health, implementation, metabolic syndrome

High rates of cardiometabolic diseases are the primary cause of premature mortality for individuals living with severe mental illness (SMI).[1] Lifestyle factors, in particular low levels of physical activity (PA) and low fitness, as well as poor diet and

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smoking, combined with the side effects of psychotropic medication, are key risk factors for the development of cardiometabolic diseases.[2,3] The prevalence of these poor lifestyle factors has been well-described in the SMI population, and addressing this burden of high cardiometabolic risk is no longer a knowledge gap but rather an implementation gap.[4] Calls to 'progress towards parity'[5] and the internationally endorsed HeAL (Healthy Active Lives) Declaration[6] have gained traction with policymakers. For example, the Mental Health Commission of New South Wales developed 'Living Well: A Strategic Plan for Mental Health in NSW' that identified key action items in mental-health treatment, including that services should 'ensure the physical health needs' of mental-health consumers are being met, starting from treatment onset. The recently published Royal Australian and New Zealand College of Psychiatrists practice guideline has also recognised the importance of physical health in people with SMI.[7]

There is now overwhelming evidence that PA and exercise play a central role in minimising cardiometabolic risk factors in people with SMI.[8] Additional benefits of PA such as reduced psychiatric symptoms,[9] improved cognitive functioning[10] and increased psychosocial functioning[11] are well established, and PA interventions are feasible and acceptable to this population.[12,13]

Despite evidence of efficacy, there remains a gap in the implementation of PA interventions in standard mental health care. There is therefore an urgent need to translate results from efficacy studies into routine care.[14] The challenges with evidence translation into 'sustainable system-wide changes within routine mental health services' have recently been identified.[15] To aid the implementation of PA as part of routine care, the current paper provides examples of successful interventions that are already happening in Australia, identifies key components of these interventions and discusses strategies used to translate these programs into routine mental health care.

Examples of integrated PA interventions

The characteristics of each PA intervention will be unique to each mental-health service and vary depending on resources, funding and staff capacity. The examples below range from inpatient to community and residential psychiatric facilities. The interventions vary in mode of delivery, with some PA interventions led by mental-health staff, personal trainers, exercise physiology students or exercise professionals. Interventions also differed in terms of models of PA delivery, ranging from partnerships with local gym facilities and community organisations to specialist positions within mental-health teams, that is, Accredited Exercise Physiologists (AEP), leading individualised PA interventions. Independent of mode of delivery, all programs aim to increase access to feasible and acceptable PA services for mental-health service users, facilitating PA adoption and maintenance in a population at high risk of inactivity and sedentary behaviour. Examples of integrated PA interventions in Australia are summarised in Table 1.

Table 1. Examples of integrated PA interventions.

Keeping the Body in Mind

The Keeping the Body in Mind (KBIM) program in South Eastern Sydney Local Health District (SESLHD) is a lifestyle intervention led by an AEP, an Accredited Practising Dietitian and a specialist cardiometabolic nurse. This program, consisting of individualised and group components, has demonstrated success in preventing antipsychotic-induced weight gain in drug-naïve youth with first-episode psychosis.[16] The KBIM program has been extended to other vulnerable groups (e.g. clozapine clinic attendees) and is now embedded as routine care, having provided treatment to more than 550 mental-health consumers across three hospitals in the SESLHD. Initial data from the roll-out of the KBIM program for first-episode psychosis have demonstrated that results from the original study are replicable and can be achievable as part of routine care.[17] Other local health districts in New South Wales are currently working to adopt and adapt the key elements of the program in their local environments (e.g. South Western Sydney, Northern Rivers). The success and continued adoption of the KBIM program indicate the feasibility of creating culture change, leading to the incorporation of programs to improve physical health behaviours within mental health care. The physical activity component of the KBIM intervention, led by the AEP, includes an initial and follow-up physical activity and fitness assessments at 12 weeks, individualised exercise programming, counselling and education, group exercise sessions (i.e. sports groups) and daily gym access. The purpose-built gym within the community mental health centre is open daily, allowing for flexible appointments.

Exercise in the inpatient setting

Similar programs are being implemented in other health-care settings around the country. For example, a private hospital in regional Queensland, Australia, has demonstrated that PA interventions are beneficial, well received and highly valued by consumers in inpatient psychiatric settings.[18] Moreover, evaluation of the impacts of individualised interventions show condition-specific association with sleep[19] and acute changes in mood.[20] These findings highlight the importance of adapting PA interventions to the needs of the individual consumer.

Exercise in residential care facility

In a Brisbane residential rehabilitation setting, a mental-health multidisciplinary team collaborated with exercise physiology (EP) students to implement a group and individualised mixed aerobic and resistance PA program for residents with SMI. Successful elements of the program that differed from prior attempts at implementing a PA program in this setting included (a) EP students providing an individualised risk assessment and exercise programing for residents, (b) the collaboration between EP students and the multidisciplinary team to address motivational barriers and (c) aiming initially for low to moderate intensity exercise to allow optimal engagement and build competence in this previously sedentary population. Early results indicated promising improvements in fitness, sedentary behaviour, negative symptoms and increased PA. This successful pilot collaboration between a university and a mental-health service revealed acceptability and feasibility in individuals with chronic SMI. Delivered with little additional program cost, it has been extended to a longer 24-week program, with implementation of this program at further sites across Metro South rehabilitation services in 2017. Data collection is ongoing.

Community-based interventions

Community organisations can also provide an effective platform for delivery of PA interventions. *Healthy Bodies, Healthy Minds* (HBHM) is an exercise, healthy nutrition and social-engagement program implemented by the Queensland Police-Citizens Youth Welfare Association (PCYC Queensland), in partnership with Queensland-based mental-health services and non-government organisations. HBHM is a continuing program delivered in eight-week rounds, consisting of one group session and one unsupervised gym-based session each week. The group session is facilitated by a personal trainer (PT) and peer-support worker, and involves one hour of exercise followed by a one-hour nutritional education session (Ozharvest NEST program) or a social-engagement component. The unsupervised component involves attending the PCYC as a gym member and completing the exercise program they developed with the PT. Participants are encouraged to meet at the gym at a prearranged time with other participants. Exercise programs were developed in consultation with participants but maintained a similar structure of 30 minutes of aerobic exercise (continuous or interval training) and 30 minutes of resistance exercise (six to eight exercises focused on major muscle groups).

Five HBHM pilot programs were implemented in Brisbane in 2016. Of the 58 participants who began (M_{age}=37 years; 48% female; 62% with psychotic illness), 38 (66%) completed, with a median attendance of 75% of the supervised sessions. Significant improvements in self-reported depression, psychological distress, mental health–related quality of life, self-worth and hope were found. Importantly, this demonstrated the feasibility of implementing service-wide, evidence-based PA interventions for mental-health consumers in partnership with community organisations.

PA: physical activity; AEP: Accredited Exercise Physiologist; SMI: severe mental illness.

Summary

Although many of these programs are relatively new, they demonstrate the acceptability, feasibility and broad health benefits of PA interventions for mental-health consumers. Wider recognition of the benefits of inpatient and community-based PA programs should encourage greater adoption by mental-health services and drive the integration of PA in mental-health treatment as part of evidence-based best practice care.

Key components

Key components that facilitate the success of these programs are highlighted in Table 2. Adopting these as constituents of a PA intervention is likely to improve engagement and increase efficacy, leading to better physical and mental-health outcomes. Irrespective of available resources, funding or supervision, all programs adopt evidence-based exercise prescription practices with the aim of helping consumers meet the Australian recommended Physical Activity and Sedentary Behaviour guidelines.

Table 2. Key components of physical activity interventions in mental-health settings

Early intervention: Intervention at the earliest stages of psychosis is imperative in preventing rapid weight gain[16] typically seen at commencement of antipsychotic medication. More research exploring physical health and PA amongst the at-risk mental states (ARMS) or ultra-high risk population is required.[21]
Routine metabolic monitoring: Monitoring of cardiometabolic indicators (e.g. body mass index, blood pressure, waist circumference and metabolic blood profile) even before antipsychotic medication commencement to determine an appropriate level of intervention based on established risk-stratification algorithms such as the Positive Cardiometabolic Health Algorithm.[22]

Multidisciplinary approach: All key stakeholders should be involved in PA promotion, including mental health and allied health team members, family and carers. Importantly, all interventions should apply recovery-orientated consumer-centred practises, achieved by routine program evaluation and consumer feedback.[12,18]

Behaviour-change strategies: Apply principles of motivational interviewing and behaviour-change counselling by determining readiness to change and satisfying the 'three psychological needs' of competency, autonomy and relatedness.[23,24]

Individualisation: Individualised physical activity counselling (to promote increased physical activity and reduced sedentary behaviour) and supervised, tailored exercise programs (to address individual fitness goals) are associated with better adherence and lower drop-out.[25] Tailoring exercise programs based on the individual's physical fitness, physical activity history, goals, level of motivation and specific needs will also maximise adherence and engagement in the program. For instance, youth with first episode psychosis may be able to exercise for longer durations and at great intensities, whereas adults with long-term SMI and co-morbid cardiometabolic illness may need to start with minimising sedentary behaviour and increasing incidental activity. Additionally, consumers with SMI may experience direct barriers (e.g. symptomatology, social isolation and medication side effects) and indirect, more practical barriers (low finances, poor transport and access to resources) to PA.[26] Identifying and problem-solving barriers to attendance will facilitate adoption and maintenance of PA.

Supervision: Exercise professionals such as AEPs[27] and physiotherapists[28] are ideally positioned to provide safe, evidence-based exercise interventions, and adults with mental illness prefer direct assistance from exercise professionals (rather than education or support from doctors or clinicians).[29] Community referrals to health professionals such as AEPs can be achieved through the chronic disease-management plan, although this remains an underutilised resource.[30]

Maintaining the momentum

Given the demonstrated benefits of PA interventions for people with mental illness, it is important to address the implementation gap. Incorporating PA provides an opportunity for mental-health services to undergo systemic change and implement PA programs as part of standard care. In doing so, there is a need to address systemic barriers which to date have impeded widespread implementation of PA interventions. Practical strategies that can assist with implementation of PA interventions as part of routine mental health care are described in Table 3.

Table 3. Implementation strategies

Culture and empowerment: Creating culture change within mental-health facilities through staff education about current evidence regarding the effectiveness of PA interventions, targeted physical activity interventions to improving staff well-being and empowering staff 'champions' to develop physical activity programs that consider available resources, funding and staff capacity.[15]

Capacity and capability: Maximising capacity through student placements can be facilitated by mental-health services collaborating with local university-based training programs (e.g. Exercise Physiology, Physiotherapy and Dietetics). This can reduce nurse and clinician workloads to provide PA interventions, and enhance capability through professional development for clinical staff.

Collaborations: Developing formalised partnerships and strong referral pathways with community organisations to encourage shared care with mental-health services in promoting physical activity and healthy lifestyle behaviours. This will also assist long-term adoption of such behaviours in the recovery phase of illness.

Program evaluation: Ensuring robust evaluation of new programs, that is, assessing the feasibility and acceptability of the programs and disseminating results to build a greater understanding of what works in real-world clinical settings. This forms part of the quality circle.

Show cost-effectiveness: Lobbying funders using evidence that clearly demonstrates the benefits of physical activity interventions and their cost-effectiveness in reducing cardiometabolic risk factors.[31]

Service-user engagement: Incorporating consumers and carers in the decision-making process to ensure interventions are consumer centred.

Conclusion

There is now strong evidence to demonstrate the benefits of PA interventions for individuals with SMI. Interventions will vary in terms of mode and intensity of service delivery, but, importantly, they promote increased PA participation and are feasible and acceptable within this population, across a range of settings. Summarising the recommendations from Tables 1–3 leads us to conclude that irrespective of the setting, exercise interventions which are supervised by qualified professionals, individualised to account for illness type and severity, incorporate multidisciplinary teams, adopt routine cardiometabolic monitoring, are participation-focused, and supported by staff and management are likely to be well-received by consumers, and lead to improved mental and physical health outcomes. Such programs are safe, can be implemented at low cost utilising community or University partnerships and are easily evaluated to improve translation to other settings.

There is growing momentum to embed such interventions within mental-health services in Australia. Implementing the key components outlined in Table 2 and adopted by currently successful PA interventions and using the strategies described in Table 3 to overcome the implementation barriers will ensure this momentum is maintained. The result will be wider access to and utilisation of PA interventions in mental-health settings, leading to improved physical and mental-health outcomes for this vulnerable population.

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References

1. Lawrence D, Hancock KJ and Kisely S. The gap in life expectancy from preventable physical illness in psychiatric patients in Western Australia: retrospective analysis of population based registers. *Br Med J* 2013; 346: f2539.
2. Galletly C, Foley D, Waterreus A, et al. Cardiometabolic risk factors in people with psychotic disorders: the second Australian national survey of psychosis. *Aust N Z J Psychiatry* 2012; 46: 753–761.
3. Suetani S, Waterreus A, Morgan V, et al. Correlates of physical activity in people living with psychotic illness. *Acta Psychiatr Scand* 2016; 134: 129–137.
4. Bartels SJ. Can behavioral health organizations change health behaviors? The STRIDE study and lifestyle interventions for obesity in serious mental illness. *Am J Psychiatry* 2015; 172: 9–11.
5. Curtis J and Shiers D. Progress towards parity: improving the physical health of long-term psychiatric inpatients. *Aust N Z J Psychiatry* 2014; 48: 1060–1061.
6. Shiers D and Curtis J. Cardiometabolic health in young people with psychosis. *Lancet Psychiatry* 2014; 1: 492–494.
7. Galletly C, Castle D, Dark F, et al. Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the management of schizophrenia and related disorders. *Aust N Z J Psychiatry* 2016; 50: 410–472.
8. Vancampfort D, Knapen J, De Hert M, et al. Cardiometabolic effects of physical activity interventions for people with schizophrenia. *Phys Ther Rev* 2009; 14: 388–398.
9. Rosenbaum S, Tiedemann A, Ward PB, et al. Physical activity interventions: an essential component in recovery from mental illness. *Br J Sports Med* 2014; 49: 1544–1545.
10. Firth J, Stubbs B, Rosenbaum S, et al. Aerobic exercise improves cognitive functioning in people with schizophrenia: a systematic review and meta-analysis. *Schizophr Bull* 2017: 43: 546–556.
11. Vancampfort D, Guelinckx H, Probst M, et al. Aerobic capacity is associated with global functioning in patients with schizophrenia. *J Mental Health* 2015; 24: 214–218.
12. Rosenbaum S, Tiedemann A, Stanton R, et al. Implementing evidence-based physical activity interventions for people with mental illness: an Australian perspective. *Australas Psychiatry* 2016; 24: 49–54.
13. Firth J, Carney R, Elliott R, et al. Exercise as an intervention for first-episode psychosis: a feasibility study. *Early Interv Psychiatry*. Epub ahead of print March 14 2016. DOI: 10.1111/eip.12329.
14. Vancampfort D, Stubbs B, Ward PB, et al. Integrating physical activity as medicine in the care of people with severe mental illness. *Aust N Z J Psychiatry* 2015; 49: 681–682.
15. Suetani S, Rosenbaum S, Scott J, et al. Bridging the gap: what have we done and what more can we do to reduce the burden of avoidable death in people with psychotic illness? *Epidemiol Psychiatr Sci* 2016; 25: 205–210.
16. Curtis J, Watkins A, Rosenbaum S, et al. Evaluating an individualised lifestyle and life-skills intervention to prevent antipsychotic-induced weight gain in first episode psychosis. *Early Interv Psychiatry* 2016; 10: 267–276.
17. Ward PB, Watkins A, Teasdale S, et al. Replicating positive physical health outcomes for youth with psychosis: extending the Bondi 'Keeping The Body In Mind' program to new FEP settings. *Early Interv Psychiatry* 2016; 10: 109–109.
18. Stanton R, Donohue T, Garnon M, et al. Participation in and satisfaction with an exercise program for inpatient mental health consumers. *Perspect Psychiatr Care* 2016; 52: 62–67.
19. Stanton R, Donohue T, Garnon M, et al. The relationship between exercise intensity and sleep quality in people hospitalised due to affective disorders: a pilot study. *Issues Mental Health Nurs* 2016; 37: 70–74.
20. Stanton R, Reaburn P and Happell B. The effect of acute exercise on affect and arousal in inpatient mental health consumers. *J Nerv Mental Dis* 2016; 204: 658–664.
21. Carney R, Cotter J, Bradshaw T, et al. Cardiometabolic risk factors in young people at ultra-high risk for psychosis: a systematic review and meta-analysis. *Schizophr Res* 2016; 170: 290–300.
22. Curtis J, Newall HD and Samaras K. The heart of the matter: cardiometabolic care in youth with psychosis. *Early Interv Psychiatry* 2012; 6: 347–353.
23. Vancampfort D, Madou T, Moens H, et al. Could autonomous motivation hold the key to successfully implementing lifestyle changes in affective disorders? A multicentre cross sectional study. *Psychiatry Res* 2015; 228: 100–106.
24. Vancampfort D, De Hert M, Stubbs B, et al. Negative symptoms are associated with lower autonomous motivation towards physical activity in people with schizophrenia. *Compr Psychiatry* 2014; 56: 128–132.
25. Vancampfort D, Rosenbaum S, Schuch FB, et al. Prevalence and predictors of treatment dropout from physical activity interventions in schizophrenia: a meta-analysis. *Gen Hosp Psychiatry* 2016; 39: 15–23.
26. Firth J, Rosenbaum S, Stubbs B, et al. Motivating factors and barriers towards exercise in severe mental illness: a systematic review and meta-analysis. *Psychol Med* 2016; 46: 2869–2881.
27. Lederman O, Grainger K, Stanton R, et al. Consensus statement on the role of Accredited Exercise Physiologists within the treatment of mental disorders: a guide for mental health professionals. *Australas Psychiatry* 2016; 24: 347–351.
28. Stubbs B, Probst M, Soundy A, et al. Physiotherapists can help implement physical activity programmes in clinical practice. *Br J Psychiatry* 2014; 204: 164.
29. Chapman JJ, Fraser SJ, Brown WJ, et al. Physical activity preferences, motivators, barriers and attitudes of adults with mental illness. *J Mental Health* 2016; 25: 448–454.
30. Stanton R, Rosenbaum S, Kalucy M, et al. A call to action: exercise as treatment for patients with mental illness. *Aust J Prim Health* 2015; 21: 120–125.
31. Verhaeghe N, De Smedt D, De Maeseneer J, et al. Cost-effectiveness of health promotion targeting physical activity and healthy eating in mental health care. *BMC Public Health* 2014; 14: 856.