Physical Activity and Mental Health

Policy Position Statement

Key messages:	Physical inactivity is considered a risk factor for a variety of mental illnesses, including depression, anxiety and age-related cognitive decline. Physical activity interventions can form a part of treatment for these mental illnesses and have public health benefits. Increasing rates of physical inactivity globally may be contributing to rising rates of mental illness.
Key policy positions:	1. Strategies are required for universal prevention, selective prevention and indicated prevention for various population groups. 2. Inter-sectoral and cross-governmental collaboration at both State and Federal levels to raise awareness and facilitate campaigns on physical inactivity is required.
Audience:	Federal, State and Territory Governments, policymakers and program managers.
Responsibility:	PHAA Mental Health Special Interest Group
Date adopted:	23 September 2021

20 Napier Close Deakin ACT Australia 2600 – PO Box 319 Curtin ACT Australia 2605
T (02) 6285 2373 **E** phaa@phaa.net.au **W** www.phaa.net.au

Physical Activity and Mental Health

Policy position statement

PHAA affirms the following principles:

1. Tackling the issue of physical inactivity in society is complex, and requires research, innovation and engagement with a multitude of stakeholders. A mixture of strategies is required for this issue.
2. Broad engagement with stakeholders is key, including ministries of health, education, sport and other recreation sector authorities, town planning and transport; employers; the private sector; media; academics and individuals.
3. Increased physical activity will be beneficial for the individual and broader society and will reduce rates of mental and physical illnesses, leading to economic benefits.
4. Optimal physical activity takes into account the possibility of restrictions beyond individual and community control.

PHAA notes the following evidence:

1. Rates of physical inactivity are rising globally, including in Australia. In 2014-15, 45% of Australians aged 18-64 did not participate in the recommended amount of physical activity.(1)
2. There are numerous causes of physical inactivity, including reductions in incidental transport and occupational-related physical activity prevalence, attributed to an increasingly globalised and urbanised world and intensification of global competition for educational and professional opportunities, leading to more sedentary time.(2)
3. Particular groups may be less likely to participate in physical activity due to cultural, religious or physiological reasons. The barrier could be physical (physical disability) or situational (caring responsibilities, low socioeconomic status requiring excessive working hours, cultural/religious prohibitions, geographic location).
4. Weight stigma has a negative impact on mental health(3) and can be a barrier to physical activity. Experiences of weight stigma prevent people in bigger bodies from participating in health-promoting activities like exercising in public as they do not want to be ridiculed or 'on display'.(4) Campaigns and programs encouraging increased physical activity should ensure that they are not increasing weight stigma.(5)
5. Many women and girls do not do enough physical activity to benefit their health and wellbeing and face more barriers than men.(6) Barriers to regular physical activity for women and girls include time, income, caring responsibilities, body image concerns and perceptions of safety.(6)
6. Physical inactivity is a risk factor for a variety of mental illnesses, including depression,(7) anxiety,(8) and age-related cognitive decline such as cognitive aging, mild cognitive impairment and Alzheimer's dementia.(9)

7. The proportion of deaths from non-communicable diseases worldwide attributable to physical inactivity is around 10% and as high as 30%, depending on the condition.(10) Non-communicable diseases can cause mental-ill health.(11) Around 13% of Alzheimer's disease cases worldwide are attributable to physical inactivity.(12) If 5% of inactive people in Australia became active, the prevalence of dementia would reduce by 11% in 2051.(13)

8. Physical inactivity is also associated with poorer positive and negative symptom profiles in individuals with first-episode psychosis.(14) Symptoms in psychotic mental illnesses are typically divided into two groups, positive and negative; whereby positive symptoms are "added on" to a person's experience (e.g. delusions) and negative symptoms are "taken away" or reduced from it (e.g. reduced motivation).

9. Physical inactivity is a risk factor for common cardio-metabolic disorders such as obesity, type-2 diabetes mellitus and cardiovascular disease, which are associated with mental illness.(15, 16) Side effects of antipsychotic medications increase the risk of weight gain, diabetes and cardiovascular disease through impact on insulin sensitivity and lipid metabolism,(17) contributing to a 10-32 year reduction in life expectancy for people living with schizophrenia.(18-20)

10. Physical activity interventions are particularly relevant for individuals with severe mental illness due to their higher prevalence of these cardio-metabolic disorders.

11. Physical inactivity was estimated to cost Australia $805 million in 2013.(21)

12. The Australian Government's Department of Health has published evidence-based Physical Activity and Sedentary Behaviour Guidelines, uniquely constructed for varying age ranges (0-5 years, 5-12 years, 13-17 years, 18-64 years, 65 years and older).(22)

13. Physical activity can include aerobic or endurance exercise (e.g. walking, cycling), strength of resistance training (e.g. weight training), flexibility, balance and mind-body exercises (e.g. yoga, tai chi, qi gong).

14. Physical activity can act as a protective factor for mental illness. (23, 24) Increased physical activity has beneficial effects on the body and brain, including heart health, obesity and related metabolic disturbances, neuronal health and neurotransmitters,(25) brain blood flow and brain grey matter volume and reductions in brain shrinkage in old age.(26)

15. Physical activity interventions, either alone or in combination with pharmacological agents, have beneficial effects in the treatment of multiple types of mental illness.(27, 28)

16. Structured exercise is an effective treatment for depression, with effect sizes equivalent to medication and psychological therapies.(29) Replacing 30 minutes of sedentary behaviour with 30 minutes of physical activity reduces depressive symptoms. (30)

17. Physical activity recommendations and interventions must be considered from a number of perspectives. For individuals, physical activity interventions can be offered by health professionals, teachers and educators, or workplace managers. For communities, interventions can be offered by any business or organisation and governments.

18. Structural and environmental changes can assist in increasing incidental physical activity and support people to be more physically active.

19. Implementing this policy would contribute towards achievement of UN Sustainable Development Goal 3: Good Health and Well-being.

PHAA seeks the following actions:

20. Strategies to enhance physical activity and reduce physical inactivity in the general population should include:

- *Strategies of universal prevention* - for example, environmental and urban redesign (including general safety considerations) to increase incidental physical activity in the whole population; physical activity promotion based on thorough investigations of barriers and facilitators.
- *Strategies of selective prevention* - for example, targeted promotion campaigns to increase the physical activity of individuals at risk of mental illnesses.
- *Strategies of indicated prevention* -for example, health professionals offering specific advice on physical activity programs if they determine an individual has sub-syndromal symptoms.
- *Inter-sectoral and cross-governmental collaboration* - at both State and Federal levels to raise awareness and facilitate campaigns on physical inactivity.
- *Investment in education campaigns* - to provide information on the benefits of physical activity in preventing mental illness and maintaining good mental health, as well as encouraging and motivating people to increase physical activity.

PHAA resolves to:

21. Advocate for the above steps to be taken based on the principles in this position statement.
22. Working with and advocating for at-risk and marginalised groups
23. Advocate for interventions to accommodate differing needs of people in recognised priority groups
24. Advocate for interventions to recognise and address the barriers to being physically active that people in recognised priority groups may experience

Adopted 2018, revised 2021

References

1. Australian Bureau of Statistics. National Health Survey: First Results. Australia 2014-15. ABS Catalogue no. 4364.0.55.001. Canberra ABS; 2015.
2. Kohl HW, Craig CL, Lambert EV, Inoue S, Alkandari JR, Leetongin G, et al. The pandemic of physical inactivity: global action for public health. The Lancet. 2012;380(9838):294-305.
3. Emmer C, Bosnjak M, Mata J. The association between weight stigma and mental health: A meta-analysis. Obesity reviews. 2020;21(1):e12935-n/a.
4. Lewis S, Thomas SL, Blood RW, Castle DJ, Hyde J, Komesaroff PA. How do obese individuals perceive and respond to the different types of obesity stigma that they encounter in their daily lives? A qualitative study. Social science & medicine (1982). 2011;73(9):1349-56.
5. National Eating Disorders Collaboration. Evaluating the risk of harm of weight-related public messages. . Sydney: National Eating Disorders Collaboration; 2011.
6. VicHealth. Females and physical activity: What the research shows Victorian Health Promotion Foundation. Carlton, Victoria: VicHealth; 2019.
7. Mammen G, Faulkner G. Physical activity and the prevention of depression: a systematic review of prospective studies. Am J Prev Med. 2013;45(5):649-57.
8. Moylan S, Eyre HA, Maes M, Baune BT, Jacka FN, Berk M. Exercising the worry away: how inflammation, oxidative and nitrogen stress mediates the beneficial effect of physical activity on anxiety disorder symptoms and behaviours. Neurosci Biobehav Rev. 2013;37(4):573-84.
9. de Bruijn RF, Schrijvers EM, de Groot KA, Witteman JC, Hofman A, Franco OH, et al. The association between physical activity and dementia in an elderly population: the Rotterdam Study. Eur J Epidemiol. 2013;28(3):277-83.
10. Lee IM, Shiroma EJ, Lobelo F, Puska P, Blair SN, Katzmarzyk PT. Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. The Lancet. 2012;380(9838):219-29.
11. Stein DJ, Benjet C, Gureje O, Lund C, Scott KM, Poznyak V, et al. Integrating mental health with other non-communicable diseases. BMJ (Online). 2019;364:l295-l.
12. Barnes DE. Review: The projected effect of risk factor reduction on Alzheimer's disease prevalence. Lancet Neurology. 2011;10(9):819-28.
13. Nepal B, Brown L, Ranmuthugala G. Modelling the impact of modifying lifestyle risk factors on dementia prevalence in Australian population aged 45 years and over, 2006-2051. Australas J Ageing. 2010;29(3):111-6.
14. Lee EHM, Hui CLM, Chang WC, Chan SKW, Li YK, Lee JTM, et al. Impact of physical activity on functioning of patients with first-episode psychosis — A 6 months prospective longitudinal study. Schizophrenia Research. 2013;150(2):538-41.
15. Hordern MD. Exercise prescription for patients with type 2 diabetes and pre-diabetes: a position statement from Exercise and Sport Science Australia. Journal Of Science And Medicine In Sport. 2012;15(1):25-31.
16. Mann N, Rosenzweig A. Can exercise teach us how to treat heart disease? Circulation. 2012;126(22):2625-35.
17. Newcomer JW. Antipsychotic medications: Metabolic and cardiovascular risk. J Clin Psychiatry. 2007;68(Suppl 4):8-13.

18. Chang CK, Hayes RD, Perera G, Broadbent MT, Fernandes AC, Lee WE, et al. Life expectancy at birth for people with serious mental illness and other major disorders from a secondary mental health care case register in London. PLoS One. 2011;6(5):e19590.
19. Miller BJ, Paschall III CB, Svendsen DP. Mortality and medical comorbidity among patients with serious mental illness. Psychiatric Services. 2006;57(10):1482-7.
20. Hennekens CH, Hennekens AR, Hollar D, Casey DE. Schizophrenia and increased risks of cardiovascular disease. American Heart Journal. 2005;150(6):1115-21.
21. Ding D, Lawson KD, Kolbe-Alexander TL, Finkelstein EA, Katzmarzyk PT, van Mechelen W, et al. The economic burden of physical inactivity: a global analysis of major non-communicable diseases. The Lancet. 2016;388(10051):1311-24.
22. Department of Health. Australia's physical activity and sedentary behaviour guidelines http://www.health.gov.au/internet/main/publishing.nsf/content/health-pubhlth-strateg-phys-act-guidelines: Commonwealth of Australia; 2017 [updated 21 November 2017; cited 2018 26 June].
23. Harvey SB, Øverland S, Hatch SL, Wessely S, Mykletun A, Hotopf M. Exercise and the Prevention of Depression: Results of the HUNT Cohort Study. The American journal of psychiatry. 2018;175(1):28-36.
24. Schuch FB, Vancampfort D, Sui X, Rosenbaum S, Firth J, Richards J, et al. Are lower levels of cardiorespiratory fitness associated with incident depression? A systematic review of prospective cohort studies. Preventive medicine. 2016;93:159-65.
25. Eyre HA, Baune BT. Assessing for unique immunomodulatory and neuroplastic profiles of physical activity subtypes: a focus on psychiatric disorders. Brain Behav Immun. 2014;39:42-55.
26. Farrow M, Ellis K. Physical activity for brain health and fighting dementia. Paper 36. Canberra: Alzheimer's Australia; 2013.
27. Cooney GM, Dwan K, Greig CA, Lawlor DA, Rimer J, Waugh FR, et al. Exercise for depression. Cochrane Database Syst Rev. 2013(9):CD004366.
28. Lautenschlager NT, Cox KI, Flicker L, Foster JK, van Bockxmeer FM, Xiao J, et al. Effects of physical activity on cognitive function in older adults at risk for Alzheimer Disease: A randomised trial. JAMA. 2008;300(9):1027-37.
29. Walker ER, McGee RE, Druss BG. Mortality in Mental Disorders and Global Disease Burden Implications: A Systematic Review and Meta-analysis. JAMA psychiatry (Chicago, Ill). 2015;72(4):334-41.
30. Yasunaga A, Shibata A, Ishii K, Koohsari MJ, Oka K. Cross-sectional associations of sedentary behaviour and physical activity on depression in Japanese older adults: an isotemporal substitution approach. BMJ open. 2018;8(9):e022282-e.