



Original research

Physical activity and sedentary behaviour of adults with mental illness



Justin J. Chapman*, Sarah J. Fraser, Wendy J. Brown, Nicola W. Burton

School of Human Movement and Nutrition Sciences, The University of Queensland, Brisbane, Australia

ARTICLE INFO

Article history:

Received 30 November 2014
 Received in revised form 28 June 2015
 Accepted 23 July 2015
 Available online 30 July 2015

Keywords:

Mental illness
 Mental health
 Physical activity
 Sedentary behaviour
 Accelerometer
 Questionnaire

ABSTRACT

Objectives: To assess physical activity (PA) and sedentary behaviour (SB) in non-institutionalised adults with mental illness, using a combination of self-report and objective measures.

Design: Cross-sectional

Methods: Participants completed PA questionnaires (time spent walking for transport, walking for recreation, gardening, vigorous-, and moderate-intensity activities), and SB questionnaires (time spent sitting for TV, travel, work, computer use, and reclining). Participants also wore an accelerometer for 7 days. Accelerometry estimates of time spent in SB, light activity, and moderate-to-vigorous activity (MVPA), bout durations, and, breaks in sedentary time, were calculated.

Results: 142 participants completed the questionnaires. The median time spent in self-reported MVPA and SB was 4.5 h/week and 10.7 h/day, respectively. Walking for transport, and sitting to watch TV, contributed most to self-report estimates; time spent reclining was an important contributor to SB. Ninety-nine participants completed the accelerometry. The median time spent in accelerometer-derived MVPA and SB was 26 min/day and 9.2 h/day respectively; 7% of MVPA time was in bouts of 10 min or more, and 34% of SB time was in bouts of over 20 min.

Conclusions: A high proportion of participants reported activity levels consistent with physical activity guidelines; however, a small proportion of activity was accumulated in bouts of 10 min or more. Participants also had high levels of SB, about one-third of which was accumulated in bouts over 20 min. PA and SB interventions for this group could target increasing recreational walking, and reducing television time.

© 2015 Sports Medicine Australia. Published by Elsevier Ltd. All rights reserved.

1. Introduction

Adults with mental illnesses have a shorter life expectancy than the general population,¹ and increased risk of chronic disease.² Physical activity (PA) can protect against these outcomes,³ and reduce depression and anxiety.⁴ High levels of sedentary behaviour (SB) are associated with increased risk of morbidity and all-cause mortality,⁵ and may also be associated with poor mental health.⁶ Therefore, it is important to understand the levels of PA and SB of adults with mental illness.

Most studies of PA and SB in adults with mental illness have used self-report measures only. These studies have commonly assessed the frequency (e.g., times/week) and intensity of activities,^{7–9} or have only reported categories of total activity.^{2,10} Few studies have reported on the self-reported duration of PA,^{11,12} which is important for determining adherence to PA guidelines, and identifying

the most common contexts of PA participation. A questionnaire study with 21 community-based adults with mental illness reported that walking comprised the greatest, and leisure-time activity the lowest, proportion of moderate-to-vigorous physical activity (MVPA).¹¹ Another questionnaire study with 194 outpatients with schizophrenia, found low engagement in leisure-time sports, and similar self-reported values for weekdays and weekend days: ~12.6 h/day in sedentary and light (e.g., driving, shopping), ~1.3 h/day in moderate, and ~0.3 h/day in vigorous activities.¹² This study assessed combined sedentary and light activities¹²; however, distinguishing SB from light activity is important, given the different health-related implications.⁵ One study assessed self-reported SB, which found average sitting times of 5.1 h/day¹¹; this study did not assess domain-specific sedentary behaviours, or time spent reclining. Self-report methods are, however, prone to reporting errors such as recall and social desirability bias.¹³

Objective methods, such as accelerometry, allow for unbiased measurement, but few studies have used these in adults with mental illness. Accelerometry studies with sample sizes ranging from 46¹⁴ to 165¹⁵ have reported mean times spent in SB ranging from 9.1 to 13.5 h/day,^{14–16} and MVPA ranging from 14 to

* Corresponding author.

E-mail addresses: justin.chapman@uq.net.au, justin.chapman@uqconnect.edu.au (J.J. Chapman).

42 min/day.^{14–17} Two studies also assessed bout durations of SB and MVPA—one found that adults with depression and/or anxiety accumulated 42% of SB in ≥ 20 min bouts, and 43% of MVPA in ≥ 10 min bouts¹⁵; the other found that only 4% of a sample of adults with mental illnesses who had accumulated at least 150 min/week of MVPA, did so in ≥ 10 min bouts.¹⁷ These studies have typically focused on samples of adults with specific psychiatric diagnoses, e.g., schizophrenia,¹⁴ depression and/or anxiety,¹⁵ and bipolar disorder¹⁶; one study was with adults with a range of diagnoses.¹⁷ Accelerometry does not provide contextual information about PA and SB, which can be useful for intervention planning; e.g., if active transport is found to be high, PA interventions may target recreational activity.

Using a combination of self-report and objective measures may provide more comprehensive assessment; however, few studies have done so. One study with 54 adults with schizophrenia, found that participants reported a mean of 11.2 h/week in PA (including low intensity), and that the most commonly reported activity was walking.¹⁸ This questionnaire also assessed sitting time, however, this was operationalised as a 'sitting index', which does not provide information about the duration or context of sedentary behaviours. Accelerometer data from 16 participants indicated that 8.9 h/day was spent in SB, 32 min/day in moderate, and 4 min/day in vigorous activity.¹⁸

Previous research suggests high levels of SB in adults with mental illness, with lower estimates from self-report measures than accelerometry (5.1 vs. ≥ 8.9 h/day). Conversely, self-reported MVPA tends to be higher than accelerometry (~ 1.6 h/day vs. ≤ 42 min/day). Differences in PA and SB estimates across studies could be due to differences in samples (e.g., diagnoses), or measures used. Most studies have been with participants with a specific diagnosis; assessing PA and SB in diagnostically heterogeneous groups is important, because PA and SB intervention can benefit adults with a broad range of mental illnesses.¹⁹ More research using self-report and objective measures with adults with mental illnesses is therefore needed to provide insight into how (e.g., bout durations, break frequency, measured intensity, etc.), and in what context, PA and SB is accumulated for this group.

The aim of this study was to assess the PA and SB of adults across a range of mental illnesses, using self-report and objective methods.

2. Methods

This was a cross-sectional study. Individuals were approached in waiting rooms of five psychiatric outpatient clinics, and support groups of four community-based mental health organisations in Brisbane, Australia, and verbally invited to participate. Project posters were placed in waiting rooms, and interested people could contact the researcher directly, or staff members could refer interested clients. Eligible participants were non-institutionalised men and women, who self-identified as recovering from mental illness, were ambulatory, able to understand English, and over 18 years of age. People with visible distress or severe intellectual impairment were not invited to participate.

There were two study components: Component 1 involved reporting PA and SB using self-administered questionnaires. Participants could complete the questionnaires immediately or take them home; verbal agreement was taken as consent. Participants received an AUD\$5 gratuity upon completion.

The PA questionnaire was adapted from the Active Australia survey to have two walking items.²⁰ Respondents reported the total frequency and duration in the previous week of: (a) walking for transport; (b) walking for recreation; (c) vigorous yard work; (d) vigorous activity, and (e) other moderate intensity activities.

This version of the questionnaire has been shown to have moderate correlations with accelerometry ($\rho = 0.43$ – 0.52) for mid-aged women.²¹ Consistent with other state and national physical activity surveys, self-report data were truncated to limit potential over reporting.²⁰ Self-reported activity for each questionnaire item was truncated to 14 h/week.²⁰ Self-reported moderate-to-vigorous activity in the previous week (Sr-MVPA/week) was calculated as the sum of time spent in walking (for transport and recreation/exercise), moderate activity, and vigorous activity weighted by two (excluding yard work), and truncated to 28 h/week.²⁰ Participants, who reported at least 150 min of Sr-MVPA/week were classified as meeting PA guidelines.²²

The SB questionnaire was adapted from a questionnaire which asks about sitting time on each of a usual weekday and weekend day, in each of: (a) traveling; (b) at work; (c) watching television; (d) computer use; (e) leisure time (not including TV).²³ The questionnaire has been shown to have high validity for sitting at work and computer use ($r = 0.69$ – 0.74), for mid-aged adults.²³ Because SB is typically defined to include reclining time, an additional item was added to assess reclining time, not including sleep (e.g., lying down due to stress, pain, or boredom). Self-reported sedentary time for each questionnaire item was truncated to 12 h/day, with the exception of sitting for travel, which was truncated to 8 h/day. Individual questionnaire items were summed for weekdays and weekend days, and self-reported sedentary behaviour in a usual day (Sr-SB/day) was calculated as (usual weekday $\times 5$ + usual weekend $\times 2$)/7, and truncated to 20 h/day.

Component 2 involved wearing an ActiGraph GT3X+ accelerometer on the right hip, 24 h/day for seven consecutive days. During the monitoring period, participants recorded time to bed, time out of bed, and non-wear times, in a diary. The researcher (JC) met participants to demonstrate how to use the monitor, and measure height and weight. Accelerometer data from two pilot participants were included in the analysis. Participants provided written informed consent before data collection, and received an AUD\$40 gratuity upon completion.

Accelerometer vertical axis data were converted to counts per minute (cpm). Participants' self-reported time out of bed, and time to bed, were used to define their waking hours; only waking data were analysed. Accelerometer non-wear time was identified from diaries, and from consecutive zero counts ≥ 60 min. Data were considered valid if the accelerometer was worn for at least 90% of waking hours on at least four days of the week, including at least one weekend day.

Accelerometer-derived sedentary behaviour (Ac-SB), light, and moderate-to-vigorous activity (Ac-MVPA), were defined as ≤ 100 cpm, 101–2019 cpm, and >2019 cpm, respectively. Daily averages of Ac-SB and Ac-MVPA (Ac-SB/day and Ac-MVPA/day) were calculated. For ease of comparison with Sr-MVPA/week, Ac-MVPA/day was converted to a weekly measure, by multiplying by seven (Ac-MVPA/week).

Bouts of Ac-MVPA and Ac-SB were defined as successive accelerometer data above, and below, their respective thresholds (>2019 cpm, and ≤ 100 cpm). Bouts of Ac-MVPA 10 min or longer were identified, consistent with some PA recommendations,²⁴ and bouts of Ac-SB longer than 20 min were identified as prolonged bouts, given that breaks in sedentary time every 20 min can confer health benefits.²⁵ The data between successive Ac-SB bouts (≥ 1 min) were defined as sedentary breaks; the mean number, duration, and intensity of sedentary breaks, were calculated²⁶.

Demographic questionnaires were used in both study components. Participants indicated psychiatric diagnosis from a list of: depression, anxiety (e.g., post-traumatic stress disorder, panic attack, obsessive compulsive disorder, generalised anxiety disorder), psychoses (e.g., schizophrenia, schizoaffective disorder), substance use (e.g., drug, alcohol), eating disorder, bipolar disorder,

Download English Version:

<https://daneshyari.com/en/article/2701386>

Download Persian Version:

<https://daneshyari.com/article/2701386>

[Daneshyari.com](https://daneshyari.com)