Title: Physical activity and sedentary behaviour among inpatient adults with mental illness

Author: Sarah J. Fraser Justin J. Chapman Wendy J. Brown Harvey A. Whiteford Nicola W. Burton

PII: S1440-2440(15)00179-6
DOI: http://dx.doi.org/doi:10.1016/j.jsams.2015.09.002
Reference: JSAMS 1227

To appear in: *Journal of Science and Medicine in Sport*

Received date: 25-2-2015
Revised date: 21-7-2015
Accepted date: 17-9-2015

Please cite this article as: Fraser SJ, Chapman JJ, Brown WJ, Whiteford HA, Burton NW, Physical activity and sedentary behaviour among inpatient adults with mental illness, *Journal of Science and Medicine in Sport* (2015), http://dx.doi.org/10.1016/j.jsams.2015.09.002

Title: Physical activity and sedentary behaviour among inpatient adults with mental illness

Authors: Sarah J Fraser[1], Justin J Chapman[1], Wendy J Brown[1], Harvey A Whiteford[2], Nicola W Burton[1]

Affiliations: [1]The University of Queensland, School of Human Movement and Nutrition Sciences, Brisbane, Australia; [2] The University of Queensland, School of Public Health, Brisbane, Australia.

Corresponding Author: Sarah J Fraser[1], s.guthrie@uq.edu.au

Word Counts

Abstract: 201

Document text: 2865

Number of tables: 3

Number of figures: 0

Title: Physical activity and sedentary behaviour among inpatient adults with mental illness

ABSTRACT

Objectives: The aim of this study was to assess levels and patterns of physical activity and sedentary behaviour among inpatient adults with mental illness.

Design: Cross-sectional

Methods: 101 participants completed questionnaires on time spent in walking, moderate- and vigorous- intensity activity in the past week and domain specific sitting time on a usual weekday and weekend day. 36 participants also provided valid accelerometry data. Regression analyses were used to explore associations between MVPA and sedentary behaviour and explanatory variables of gender, age, education, body mass index and psychological distress.

Results: Self-report data indicated median of 32 minutes/day (IQR: 14.46–85.71) in weighted MVPA and a median of 761 minutes/day (12.7 hours) (IQR: 552.43–917.14) in sedentary behaviour. Accelerometry data indicated an average of 115 minutes/day in light activity, 37 minutes/day in MVPA and 664 minutes/day (11.1 hours) in sedentary behaviour. Bivariate analyses indicated no significant associations between explanatory variables and MVPA and sedentary behaviour.

Conclusions: Inpatient adults with mental illness can be physically active, with walking comprising the major component of MVPA time. Inpatient adults with mental illness spend a significant amount of time sitting; intervention strategies could focus on reducing the time spent sitting in general relaxation and doing nothing.

Keywords: Mental health, physical activity, sedentary behaviour, accelerometers

INTRODUCTION

The life expectancy of adults with mental illness is worse than that of the general population and is largely due to poor physical health status[1,2] including obesity, type two diabetes mellitus, hypertension, dyslipidemia and cardiovascular disease[3,4]. Low levels of physical activity [5,6] and high levels of sedentary behaviour[7,8] may contribute to these poor health outcomes and reduced life expectancy[2].

Studies on physical activity and sedentary behaviour of adults with mental illness have predominantly been carried out in community settings[9-11] or subsumed in population-based surveys[12]. One Australian survey reported that 64.5% of a sample of 1,825 people with psychoses were active[12], and another reported that 49% of 150 adults with schizophrenia achieved >150 minutes of physical activity, with 44% of these achieving at least five sessions[11]. However, data from the 2007-2008 Health Survey of Australia indicated that adults who had high or very high levels of psychological distress were less likely to achieve at least 150 minutes/week of moderate intensity activity than those with lower levels of distress[13]. Accelerometer data from 60 outpatient adults with bipolar disorder found that participants averaged 14 minutes per day in moderate-vigorous physical activity (MVPA) and 13.5 hours/day in sedentary behaviour[10]. Another study concluded that 35% of 55 overweight/obese adults with severe mental illness did ≥150 minutes/week of MVPA, and the average time spent in MVPA was 120 minutes/week[14]. Studies of adults with mental illness suggest lower rates of activity among females, and those with low education and high BMI[9,15,16]; and higher rates of sedentary behaviour among those with high BMI[17].

Little research has purposively assessed physical activity and sedentary behaviour patterns among *inpatient* adults with mental illness. The inpatient experience may influence behaviour due to e.g. the impact of the hospital environment and a change in competing time demands. Time spent in hospital is an opportunity to establish adaptive self-

management practices that can then be continued out of hospital. To inform hospital-based interventions, we need to understand levels and patterns of behaviour. The aim of this study therefore, was to assess levels and patterns of physical activity and sedentary behaviour among inpatient adults with mental illness.

METHODS

This was a cross-sectional study. Participants were inpatient adults (18-75 years; N=101) with mental illness recruited in two waves over an eight-month period from a private psychiatric hospital in Brisbane, Australia. The hospital's daily inpatient census was reviewed weekly by the lead author and the charge nurse to exclude patients who did not meet the following eligibility criteria: (i) psychiatric diagnosis as defined by the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition; (ii) not experiencing acute psychiatric symptoms; (iii) not acutely suicidal; (iv) not under an involuntary treatment order. Eligible patients were verbally invited to participate at least five days after admission, to allow time to settle into the hospital. Ethical clearance was awarded by The University of Queensland Human Research Ethics Committee (2014000420).

Self-reported physical activity was assessed using a modified version of the Active Australia survey[18]. Items assessed the frequency of and total time spent walking for transport, walking for recreation and leisure, and in moderate and vigorous intensity activity during the previous week. The Active Australia survey has been used in National and state surveys[18,19] and has acceptable psychometric data with reliability coefficients ranging from 0.56-0.64 for each domain of activity[20].

Self-reported sedentary behaviour was assessed using a modified version of a questionnaire which asks about time spent sitting on each of a usual weekday and weekend day in (i) travelling to and from places, (ii) at work, (iii) watching television, (iv) using a computer and

(v) leisure time[21]. The questionnaire has high reliability for weekday sitting at work, watching television and using a computer (r = 0.84-0.78), but lower reliability for weekend days across all domains (r = 0.23-0.74). To reflect the inpatient setting, leisure time was replaced with general relaxing and five additional domains were added: (i) psycho-education group, (ii) art therapy group, (iii) with a health professional, (iv) smoking and (v) doing nothing.

Objective physical activity and sedentary behaviour were assessed using Actigraph GT3x+ accelerometers. Participants wore the accelerometer positioned on the right hip on a belt around the waist for 24 hours/day for seven consecutive days, and record in an activity diary the times (i) they got out of bed in the morning and went to bed at night and (ii) anytime they took off the accelerometer and the time they put it back on.

The Kessler (K6) scale[22] was used to assess psychological distress. It has been shown to have good reliability[23] and validity[22]. Responses were summed across items, which used a five point Likert scale. A score of 6–18 indicated low to moderate psychological distress and 19–30 high psychological distress[22].

Sociodemographic variables were assessed using standard questionnaire items. Variables included gender, age, household composition, employment status and education. Data on weight and height (used to derive body mass index) and diagnosis were retrieved from participants' medical records. As participants could be assigned multiple diagnoses, each diagnosis was recorded.

Self-reported physical activity data were included in the analysis if duration was available for at least one questionnaire item. To avoid potential over-reporting, reported times greater than 840 minutes (14hrs/week) for a single activity type were truncated at 840 minutes[18]. Total self-report MVPA was calculated in weighted minutes/week by adding time in walking for transport, walking for recreation and exercise, moderate- and vigorous- intensity activity,

with vigorous activity weighted by two to allow for its greater intensity. To further avoid potential over-reporting, total MVPA times that were recorded as greater than 1680 minutes (28 hours/week) were truncated at 1680 minutes[18].

Self-reported sedentary behaviour data were included in the analysis if reported duration was available for at least one questionnaire item. Based on the authors' knowledge of the hospital routine, times were truncated to 12 hours/day for doing nothing; 10 hours/day for each of time spent watching television, using a computer, smoking and relaxing; 5 hours/day for each of art therapy groups and with a health professional and 3 hours/day for psycho-education groups. Total daily sedentary behaviour was derived by summing times across the 10 domains and to further avoid potential over-reporting, times greater than 1020 minutes (17 hours/day) were truncated to 1020 minutes/day. Average daily sedentary behaviour was calculated by multiplying the weekday sitting total by five and the weekend sitting total by two, then adding the two sums together and dividing by seven.

Actigraph software was used to analyse the data retrieved from the GT3x+ accelerometers. Participants' day hours were defined by self-reported time out of bed in the morning and time to bed at night. Data were considered valid if the monitor was worn for at least 10 day hours/day[24] on four days of the week, including at least one weekend day[25]. Accelerometer non-wear time was identified from participants' activity diaries and from consecutive zero counts for 60 minutes or longer. The cut-point criteria used were 0–99 counts per minute for sedentary activity, 100–2019 for light activity, 2020–5998 for moderate activity and 5999 or greater for vigorous activity[26]. Moderate and vigorous activity were combined and time spent in sedentary, light and MVPA were calculated as average minutes/day.

Five explanatory variables were considered to identify potential correlates of self-reported MVPA and sedentary behaviour, including: gender and education (categorical measures); and age, body mass index and psychological distress (continuous measures). Linear

regression was used to assess bivariate associations between MVPA/sedentary behaviour and each of the five explanatory variables. Variables found to be associated at $p<0.10$ at the bivariate level were to be considered for multivariable analysis. Analyses were conducted using SPSS version 22.

RESULTS

During the recruitment, 276 patients were eligible for this study. Of these, 99 (36%) could not be contacted due to e.g. appointments with health professionals or being on leave from the hospital. This resulted in 177 (64%) patients being invited to participate. Of those invited, 118 (67%) consented to participate in the survey and 101 (57%) provided data; and 50 (28%) consented to participate in the accelerometry and 38 (21%) provided data, with 36 (95%) meeting the accelerometer wear time criteria[24]. Reasons for survey non-completion included early discharge from the hospital (n=10) and poor mental health (n=6). One participant lost the survey and declined to complete another. Reasons for accelerometry non-completion included poor mental health (n=5), early discharge from hospital (n=4) and forgetting to wear the accelerometer (n=3).

For self report activity data, scores were truncated for 3 (3%) of the participants, with extreme values identified for walking for transport (n=1) and vigorous intensity activity (n=2). For self-report sitting times, 6 (6%) participants gave no data as they found it too difficult, and of those who provided data (n=95), scores were truncated for 26 (27%) participants. The proportion of participants with extreme sitting time values was higher for attending psycho-education groups (18%) than other domains (<7% each).

Participants' demographic characteristics are summarised in Table 1. The mean age was 40.7 years (SD 14.5) and 72% were female. The majority (61%) had a depressive disorder and 68% had a high level of psychological distress.

Self-report data indicated a median of 32 weighted minutes/day (IQR: 14.46-85.71) in MVPA and a median of 761 minutes/day (12.7 hours) (IQR: 552.43–917.14) in sedentary behaviour. Accelerometry data indicated an average of 115 minutes/day in light activity, 37 minutes/day in MVPA and 664 minutes/day (11.1 hours) in sedentary behaviour.

Self-reported time spent in physical activity is summarised in Table 2. There was wide variation in time spent walking with a median of 60 minutes/week in each of walking for transport (IQR: 10.0–131.25) and walking for recreation and exercise (IQR: 0–150). Walking accounted for the majority of physical activity sessions, with one quarter of participants reporting five or more sessions/week of walking for transport, and about one third reported five or more sessions/week of walking for recreation. Median values for moderate and vigorous activity were zero. Approximately 75% of participants reported no sessions of moderate-intensity activity, and approximately half reported no sessions of vigorous-intensity activity. There was also wide variation in weighted MVPA time with a median of 225 minutes/week (IQR: 101.25–600). Overall, 65% of participants who provided self-report data met guidelines of at least 150 minutes/week of MVPA[27].

Durations of self-reported sedentary behaviour are summarised in Table 4. The longest reported sitting times were doing nothing on both weekdays (median 120 minutes/day, IQR: 60–240) and weekend days (median 120 minutes/day, IQR: 60–240), and with a health professional (median 67.5 minutes/day, IQR 46.25–180) on a weekday. Data indicated a median total time of 13 hours/day in sedentary behaviour on weekdays and 10 hours/day in sedentary behaviour on weekend days.

Accelerometry results indicated that participants spent an average time of 11.2 hours/weekdays and 10.8 hours/weekend days in sedentary behaviour; 1.85

hours/weekdays and 2.1 hours/weekend days in light activity, and 38 minutes/weekdays and 34 minutes/weekend days in MVPA.

Bivariate analyses indicated no statistically significant associations between each of the explanatory variables and self-report MVPA (gender: β=-0.079, p=0.446; education: β=-0.050, p=0.632; age: β=0.019, p=0.856; BMI: β=-0.10, p=0.341 and psychological distress: β=0.022, p=0.632) or sedentary behaviour (gender: β=-0.041, p=0.717; education: β=0.037, p=0.748; age: β=0.073, p=0.523; BMI: β=0.088, p=0.445 and psychological distress: β=0.059, p=0.607). Multivariable analyses were therefore not conducted.

DISCUSSION

This study indicates that adult inpatients with mental illness can be physically active, with 65% meeting the Australian Physical Activity Guidelines of at least 150 minutes per week[27] and a median of self-reported MVPA of 32 minutes/day (IQR: 14.46–85.71). This self-reported data was consistent with the accelerometry results, which indicated an average of 37 minutes/day in MVPA. Although our sample was predominantly comprised of people with depression, these results are consistent with one previous Australian study of people with psychosis living in the community which found that 65% were meeting guidelines[12].

Our findings however, contrast other research indicating that the majority of adults with mental illness are not meeting activity guidelines[10,11,14]. It may be that while in hospital, inpatients are in a structured and supported environment and have had a change to competing time demands, for example, work attendance. This would provide more discretionary time for MVPA. As participants were voluntary admissions, they were able to take leave, and it was observed that many people did so to walk to and around a nearby shopping mall to have a break from the hospital. In our study, walking comprised the majority of MVPA time, and few people engaged in other MVPA.

The results indicate that inpatient adults with mental illness have prolonged sitting time. Self-report data indicated a median of 761 minutes/day (12.7 hours) (IQR: 552.43–917.14) in sedentary behaviour, and accelerometry data indicated an average of 664 minutes/day (11.1 hours). These findings are similar to a previous accelerometry study of outpatient adults with bipolar disorder that found an average of 13.5 hours/day in sedentary behaviour[10]. However, another study of outpatient adults with schizophrenia spectrum disorders found an average of 6.75 hours/day in sedentary behaviour[28]. The different diagnoses of participants across studies may contribute to these study differences.

More time was spent in sedentary behaviour on weekdays than weekend days. Self-report data indicated a median time of 13 hours/weekdays and 10 hours/weekend days which was consistent with accelerometry results of an average of ~11 hours/weekdays and ~10 hours/weekend days. This could in part be attributed to the time spent with health professionals (median 67.5 minutes/day) and in psycho-education groups (median 60 minutes/day). Allied health professionals are more likely to work on weekdays and the hospital facilitates psycho-education groups only on weekdays. Participants spent a median of one hour on both weekdays and weekend days watching television. This is in contrast to general population based studies in which watching television is a common context for prolonged sedentary behaviour[29]. For example, one general population study indicated the average time spent watching television was 13 hours/week[30] which is almost double the time in our study. The short time spent watching television in our study may reflect the specific hospital setting; inpatients have limited access to television; and are obliged to either use a shared area or pay to have access to a television.

The main area of concern for this population in relation to sedentary behaviour is the time spent “doing nothing” on both weekdays and weekend days. While other hospitalized patients with physical conditions may have movement restrictions, a psychiatric population is

typically ambulatory. There is a need therefore, to explore options for non-sedentary activities on both weekdays and weekend days for inpatients with mental illness.

There were no significant associations between explanatory variables of gender, education, age, BMI and psychological distress and MVPA and sedentary behaviour which contrasts other studies conducted among adults with mental illness[9,15-17]. This may reflect the inpatient environment, however more work however is needed to confirm this finding.

Caution should be used in generalizing the results to all mental health inpatients. Our study was conducted in one private psychiatric hospital, and the majority had depression as the primary diagnosis. Different results may have been obtained with a different mix of diagnoses, for example if there were more participants with schizophrenia. The study sample was not random, not all eligible patients were invited to participate, and not all of those who consented completed the assessment. There was a potential for response bias as the recruitment relied on volunteers; patients who had no interest in activity, or those who had worse mental health might not have been included. Patients who were unable to be located due to leave from the hospital during recruitment were not included. In order to minimize participant burden and to respect privacy, data on severity of diagnosis and length of stay in hospital were not included, and so cannot be reported. As self-report and objective assessment was not conducted at the exact same time, we are unable to directly compare methods of assessment. As there was no way to ascertain if participants walked or engaged in physical activity at a sufficient intensity to constitute MVPA, self-reported MVPA may be over-estimated and may not directly translate to MVPA as assessed by accelerometry. More work is needed therefore, to compare self-report and objective measures of MVPA and sedentary behaviour in people with mental illness.

CONCLUSIONS

The study suggests that inpatient adults with mental illness can be physically active, with many engaging in walking, in particular to have time away from the hospital environment. However they spend a significant amount of time sedentary. This is important as prolonged sedentary behaviour is associated with poor physical health and may contribute to reduced life expectancy, which are more common among adults with mental illness than in the general population. This study highlights the need for sedentary behaviour advice, recommendations and interventions for psychiatric inpatients, in particular to redress time spent doing nothing while in hospital.

PRACTICAL IMPLICATIONS

- Inpatient adults can be physically active with 65% of this study population meeting the Australian Physical Activity Guidelines of at least 150 minutes per week.
- Walking is the most common type of activity.
- Inpatient adults with mental illness spend a significant amount of time sitting each day, often doing nothing.
- Hospitals could explore options for non-sedentary activities on both weekdays and weekend.

ACKNOWLEDGEMENTS

This study was supported by Toowong Private Hospital, Brisbane, Australia, who provided gatekeeper approval to access their inpatient population. No financial support was granted for this study.

REFERENCES

1. Laursen TM. Life expectancy among persons with schizophrenia or bipolar affective disorder. *Schizophr. Res.* 2011;131(1–3):101-104.
2. Lawrence D, Hancock K, Kisely S. The gap in life expectancy from preventable physical illness in psychiatric patients in Western Australia: retrospective analysis of population based registers. *BMJ.* 2013;346.
3. Galletly CA, Foley DL, 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(8):753-761.
4. Pack S. Poor physical health and mortality in patients with schizophrenia. *Nurs. Stand.* 2009;23(21):41-45.
5. Northey A, Barnett F. Physical health parameters: comparison of people with severe mental illness with the general population. *British Journal of Occupational Therapy.* 2012;75(2):100-105.
6. Nyboe L, Lund H. Low levels of physical activity in patients with severe mental illness. *Nord. J. Psychiatry.* 2013;67(1):43-46.
7. Chau JY, Grunseit A, Midthjell K, et al. Sedentary behaviour and risk of mortality from all-causes and cardiometabolic diseases in adults: evidence from the HUNT3 population cohort. *Br. J. Sports Med.* 2013;00:1-7.
8. van der Ploeg HP, Chey T, Korda RJ, Banks E, Bauman A. SItting time and all-cause mortality risk in 222 497 australian adults. *Arch. Intern. Med.* 2012;172(6):494-500.
9. Daumit GL, Goldberg RW, Anthony C, et al. Physical activity patterns in adults with severe mental illness. *J. Nerv. Ment. Dis.* 2005;193(10):641-646.
10. Janney CA, Fagiolini A, Swartz HA, Jakicic JM, Holleman RG, Richardson CR. Are adults with bipolar disorder active? Objectively measured physical activity and

sedentary behavior using accelerometry. *J. Affect. Disord.* 2014;152–154(0):498-504.

11. McLeod HJ, Jaques S, Deane FP. Base rates of physical activity in Australians with schizophrenia. *Psychiatr. Rehabil. J.* 2009;32(4):269-275.

12. Morgan VA, Waterreus A, Jablensky A, et al. People living with psychotic illness in 2010: The second Australian national survey of psychosis. *Aust. N. Z. J. Psychiatry.* 2012;46(8):735-752.

13. Australian Bureau of Statistics. National Health Survey: Physical Activity in Australia, A Snapshot, 2007 - 2008. 2011; http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4835.0.55.001main+features92007-08. Accessed 28 August 2014.

14. Jerome GJ, Rohm Young D, Dalcin A, et al. Physical activity levels of persons with mental illness attending psychiatric rehabilitation programs. *Schizophr. Res.* 2009;108(1–3):252-257.

15. Vancampfort D, Correll CU, Probst M, et al. A review of physical activity correlates in patients with bipolar disorder. *J. Affect. Disord.* 2013;145(3):285-291.

16. Vancampfort D, Knapen J, Probst M, Scheewe T, Remans S, De Hert M. A systematic review of correlates of physical activity in patients with schizophrenia. *Acta Psychiatr. Scand.* 2012;125(5):352-362.

17. Vancampfort D, Probst M, Knapen J, Carraro A, De Hert M. Associations between sedentary behaviour and metabolic parameters in patients with schizophrenia. *Psychiatry Res.* 2012;200(2–3):73-78.

18. Australian Institute of Health and Welfare. *The Active Australia Survey: A Guide and Manual for Implementation, Analysis and Reporting*. Canberra: Australian Institute of Health and Welfare; 2004.

19. Armstrong T, Bauman AE, Davies J. *Physical activity patterns of Australian adults: results of the 1999 National Physical Activity Survey*. Canberra: Australian Institute of Health and Welfare; 2000.

20. Brown WJ, Burton NW, Marshall AL, Miller YD. Reliability and validity of a modified self-administered version of the Active Australia physical activity survey in a sample of mid-age women. *Aust. N. Z. J. Public Health.* Dec 2008;32(6):535-541.

21. Marshall AL, Miller YD, Burton NW, Brown WJ. Measuring total and domain-specific sitting: a study of reliability and validity. *Med. Sci. Sports Exerc.* 2010;42(6):1094-1102.

22. Kessler RC, Green JG, Gruber MJ, et al. Screening for serious mental illness in the general population with the K6 screening scale: results from the WHO World Mental Health (WMH) survey initiative. *International Journal of Methods in Psychiatric Research.* 2010;19(S1):4-22.

23. Cornelius BLR, Groothoff JW, van der Klink JJL, Brouwer S. The performance of the K10, K6 and GHQ-12 to screen for present state DSM-IV disorders among disability claimants. *BMC Public Health.* 2013;13(128).

24. Matthews CE, Hagstromer M, Pober DM, Bowles HR. Best practices for using physical activity monitors in population-based research. *Med. Sci. Sports Exerc.* 2012;44(1 Suppl):S68-76.

25. Trost SG, McIver KL, Pate RR. Conducting accelerometer-based activity assessments in field-based research. *Med. Sci. Sports Exerc.* 2005;37(11 Suppl):S531-543.

26. Troiano RP, Berrigan D, Dodd KW, Masse LC. Physical activity in the United States measured by accelerometer. *Med. Sci. Sports Exerc.* 2008;40(1):181.

27. Australian Government Department of Health. Australia's Physical Activity and Sedentary Behaviour Guidelines for Adults. Canberra: Australian Government; 2014.

28. Snethen GA, McCormick BP, Lysaker PH. Physical Activity and Psychiatric Symptoms in Adults With Schizophrenia Spectrum Disorders. *The journal of nervous and mental disease.* 2014;202(12):845-852.

410 **29.** Dunstan DW, Barr ELM, Healy GN, et al. Television Viewing Time and Mortality: The
411 Australian Diabetes, Obesity and Lifestyle Study (AusDiab). *Circulation.*
412 2010;121(3):384-391.
413 **30.** Australian Bureau of Statistics. Australian Health Survey: Physical Activity, 2011 -
414 2012. 2013;
415 http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4364.0.55.004Chapter4002011-
416 12. Accessed 14 August 2014.
417
418
419
420

420 **Table 1**

421 Sociodemographic and health characteristics of participants

	Accelerometer	**Survey**
	n = 36	**n = 101**
Mean (SD) Age (years)	42.5 (13.6)	40.7 (14.5)
	n (%)	n (%)
Gender		
Female	30 (83.3)	73 (72.3)
Country of birth		
Australia	32 (88.9)	86 (85.1)
Household composition		
Single living alone	7 (19.4)	17 (16.8)
Single living with others / children	8 (22.2)	29 (28.7)
Couple without children	10 (27.8)	27 (26.7)
Couple with children	11 (30.6)	27 (26.7)
Employment situation		
Not working [a]	10 (27.8)	31 (30.7)
Pensioner on benefits (not old age)	10 (27.8)	27 (26.7)
Paid part time / casual work	6 (16.7)	21 (20.8)
Full time paid employment	10 (27.8)	21 (20.8)
Ability to manage on available income		
Impossible / Difficult all the time	14 (38.9)	29 (28.7)
Difficult some of the time	10 (27.8)	39 (38.6)
Not too bad	9 (25.0)	22 (21.8)

Easy	3 (8.3)	10 (9.9)
Education		
School only	10 (27.8)	35 (34.7)
Trade certificate / Diploma	10 (27.8)	25 (24.8)
Bachelor / Post-graduate Degree	16 (44.4)	41 (40.6)
Psychological Distress [b]		
Low – Moderate (6 – 18)	11 (30.6)	28 (27.7)
High (19 – 30)	24 (66.7)	69 (68.3)
Physical health		
Poor	12 (33.3)	28 (27.7)
Fair	16 (44.4)	43 (42.6)
Good	5 (13.9)	18 (17.8)
Very Good / Excellent	3 (8.3)	12 (11.0)
Body Mass index (kg/m^2) [c]		
< 18.5	0 (0 – 0)	2 (2.0)
18.5 – 24.9	9 (25.0)	26 (25.7)
25 – 29.9	10 (27.8)	27 (26.7)
> 30	16 (44.4)	44 (43.6)
Diagnosis [c, d]		
Depression	27 (75.0)	62 (61.4)
Anxiety	1 (2.8)	6 (5.9)
Bipolar Affective Disorder	6 (16.7)	19 (18.8)
Psychosis [e]	2 (5.6)	11 (11.0)

Post Traumatic Stress Disorder	5 (13.9)	12 (11.9)
Other [f]	1 (2.8)	7 (7.0)

Notes

[a] Not working: Looking for employment, full time house keeping, retired, studying, volunteering

[b] Psychological distress derived from the Kessler 6

[c] Data retrieved from participant's medical records

[d] Diagnosis: It is noted that some participants had more than one primary diagnosis.

[e] Psychosis: Schizophrenia, Schizoaffective Disorder; Psychotic Disorder

[f] Other: Obsessive Compulsive Disorder; Eating Disorder; Personality Disorder

Table 2

Domain specific self-reported physical activity duration (minutes/week)

	Median (IQR)
Walking for transport	60 (10.0 – 131.25)
Walking for recreation and exercise	60 (0 – 150)
Vigorous gardening and yard work	0 (0 – 0)
Vigorous physical activity	0 (0 – 60)
Moderate physical activity	0 (0 – 30)
Total self-reported moderate-vigorous physical activity [a]	225 (101.25 – 600)

Notes

N = 101

Items reported as median (25^{th} 75^{th} percentile)

[a] Total physical activity excludes vigorous gardening and yard work, and has vigorous activity weighted by two.

435
436 **Table 3**

437 Domain specific self-reported sedentary behaviour duration (minutes/day)

438

	Weekday Median (IQR)	Weekend Median (IQR)
Travelling to and from places	30 (0 -60)	30 (0 -60)
Watching television	60 (0 -180)	60 (0 -180)
Using a computer	30 (0 -120)	10 (0 – 120)
Psycho-education group	60 (0 – 120)	0 (-)
Art therapy group	0 (0 – 120)	0 (-)
With a health professional [a]	67.5 (46.25 – 180)	20 (0 – 30)
Smoking	0 (-)	0 (-)
General relaxing (sitting or lying) [b]	120 (60 – 240)	120 (30 – 240)
Doing work [c]	0 (0 – 60)	0 (0 – 60)
Doing nothing (sitting or lying)	120 (60 – 240)	120 (30 – 240)
Total sedentary behaviour time	780 (555 - 1020)	600 (405 - 825)

Notes

N = 101

Items reported as median (25^{th} 75^{th} percentile)

[a] Doctor, Nurse, Psychologist, Social Worker or Occupational Therapist

[b] Example: reading, needle work (not watching television or using a computer)

[c] Example: homework, assignments, reading documents, writing NOT using a computer

439

440