

# Do Adults with Bipolar Disorder have a Preference among Activity Monitoring Devices?

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## Purpose

- Bipolar disorder is associated with obesity and increased cardiovascular risk.
- Physical activity (PA) monitoring may be an effective tool to increase PA in this high risk population.
- This report examined PA monitoring preferences and problems among participants with bipolar disorder participating in the Physical Activity and Function in Adults with Bipolar Disorder (PARC2) Study.

## Methods

- Secondary data analysis of the PARC2 study conducted at the Western Psychiatric Institute and Clinic, University of Pittsburgh.
- 102 adults enrolled, 81 completed survey.
- Three PA devices were assessed; Body Media SW Pro Armband, Actigraph AM-7164, and Pedometer Omron HJ-720IT.
- Participants wore devices for one week and reported preferences and problems with each PA device.
- Device problems were categorized into “irritating”, “cumbersome”, “movement of the PA monitor”, “technical difficulties” and “impaired functioning”.
- Variables: PA device preference and problem; participant demographics (age, gender, race, BMI), diagnosis and clinical symptoms of depression and mania.
- Associations between device preference, problems, demographics and clinical symptom score were explored using X<sup>2</sup> and the F test.

## Bodymedia Armband



## Pedometer



## ActiGraph



## Results

### Correlation between Device Preference, Demographics and Test Results

Variable	Total sample (n)	Prefer Armband (n)	Prefer Pedometer (n)	Prefer Actigraph (n)	No preference (n)	Association with device preference (p-value)
All Participants (%)	81	32 (39)	20 (24)	10 (12)	16 (20)	
Age (years)						
Mean ± SD	44±11.7	42.9 ± 13.6	44.3 ± 10.9	49.5 ± 8.8	46.1 ± 10.3	0.21
Range	18.7–63.1	18.7–63.1	21.6–58.4	39.6–62.3	28.6–62.8	x <sup>2</sup>
Gender						
Female n (%)	54 (66.7)	22 (68.8)	15 (75)	5 (50)	10 (62.5)	0.56
Male n (%)	27 (33.3)	10 (31.2)	5 (25)	5 (50)	6 (37.5)	x <sup>2</sup>
Race						
Asian n (%)	3 (3.7)	1 (3.13)	1 (5.0)	0 (0)	0 (0)	0.17
Black n (%)	19 (23.5)	5 (15.63)	4 (20.0)	2 (20.0)	7 (43.75)	x <sup>2</sup>
White n (%)	59 (72.8)	26 (81.25)	15 (75.0)	8 (80.0)	9 (56.25)	
BMI						
Mean ± SD	29.5 ± 7.6	28.9 ± 8.4	29.2 ± 6.9	34.2 ± 7.6	29.5 ± 6.3	0.42
Range	18.9–50.5	19.4–50.5	18.9–46.6	24.7–43.9	22.8–44.1	F test
Diagnosis						
Bipolar I (%)	55 (68.8)	23 (74.2)	14 (70.0)	5 (50.0)	11 (68.8)	0.49
Bipolar II (%)	20 (25.0)	8 (25.8)	5 (25.0)	4 (40.0)	3 (18.7)	x <sup>2</sup>
Bipolar NOS/SA (%)	5 (6.3)	0 (0)	1 (5.0)	1 (10.0)	2 (4.5)	
Hamilton Rating Scale Depression 17						
Mean ± SD	8.6 ± 6.3	9.1±7.2	6.5±4.2	10±4.1	8.1±6.5	0.83
Range	0-31	0-31	0-12	3-17	0-24	F test
Hamilton Rating Scale Depression 25						
Mean ± SD	11.6 ± 8.1	12.4±9.5	9.1±5.7	12.7±4.8	11±8.7	0.70
Range	0-42	0-42	0-18	3-18	0-34	F test
Young Mania Rating Scale						
Mean ± SD	3.3 ± 3.9	3.375±4.2	3.0±4.38	5.4±3.1	2.6±2.5	0.89
Range	0-20	0–20	0-12	0-10	0-7	F test

- No PA monitoring device was significantly preferred over others
- Participants who reported problems with the pedometer were significantly less likely to prefer it (p < 0.01).
- Fewer participants reported problems with the actigraph, but it was also the least preferred
- Neither device preference nor problems were correlated with demographics or clinical symptom test results

## Conclusions/Clinical Implications

- No activity monitoring device was significantly preferred over others. Any of the devices may be used during research of physical activity among bipolar patients
- Data was collected prior to the ubiquitous use of digital, wrist-worn PA monitor devices capable of uploading exercise data. It would be important to include these devices in future studies of device preferences and problems

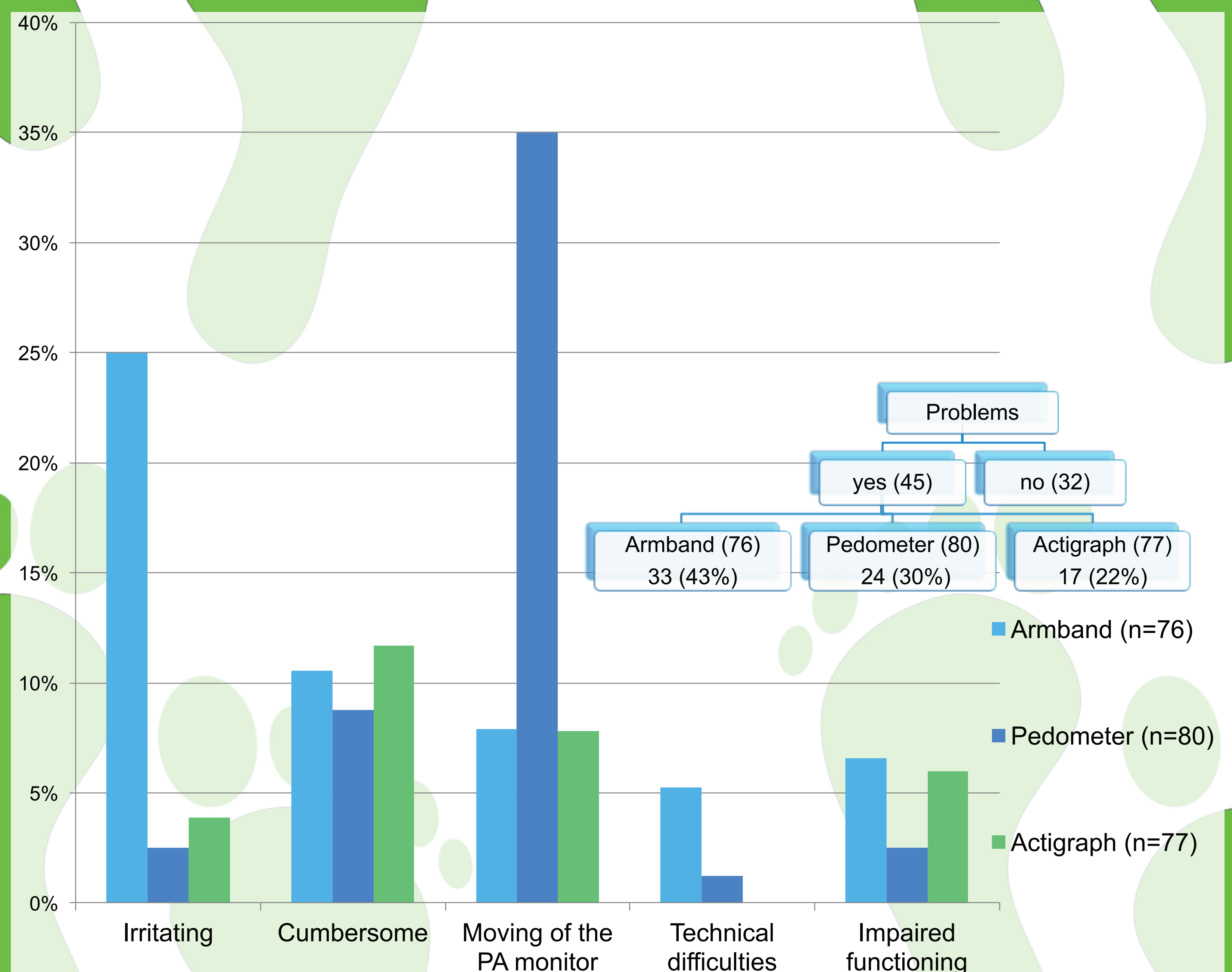


Figure 1: Problems by PA device

## Literature Cited

Janney, CA et al. Are adults with bipolar disorder active? Objectively measured physical activity and sedentary behavior using accelerometry. J Affect Disord. 2014 January; 0:498-504.

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