

Exercise and Lifestyle Therapy Improves Weight Maintenance in Young People with Psychosis: A Service Evaluation



AUTHORS: Griffiths, L.¹, Smith, J.¹, Bold, J.¹, Band, M.², Bradley, E.¹ and Hird-Smith, R.²
¹ University of Worcester, UK; ² Worcestershire Health and Care NHS Trust, Worcester, UK

INTRODUCTION

Young people with psychosis typically have higher rates of premature cardiovascular disease and metabolic disorders compared to non-psychotic peers. This has been primarily due to a sedentary lifestyle, poor diet composition, misuse of harmful substances and higher rates of obesity and smoking. When prescribed obesogenic antipsychotic medication, a weight gain of >12 kg within 2 years is typical.

PURPOSE: To examine the benefits of a 12 wk exercise and lifestyle intervention entitled 'Supporting Health and Promoting Exercise' (SHAPE) for young people recently diagnosed with psychosis.

METHODS

Participants (n=26; 8 females; mean age 27.7 ± 5.1) engaged in weekly 45' education sessions on healthy lifestyle behaviors, including:

- managing anxiety and depression,
- mindfulness and relaxation training,
- substance misuse,
- smoking cessation,
- healthy eating and nutritional advice,
- dental and sexual health care.



This was followed by a 45' exercise session including activities such as circuit and resistance training, yoga, and badminton, led by qualified exercise instructors.

Anthropometric data were measured at baseline, 12 wk and 12 month post-intervention. Lifestyle behaviors and clinical measurements, including resting heart rate, blood pressure, total cholesterol, triglycerides, HbA1c and prolactin, were assessed at baseline and 12 months post-intervention as part of their routine clinical care plan. Significant differences over time were assessed using Paired Sample *t*-tests.

RESULTS

SHAPE participants (n=26) presented with first episode psychosis (n=11), schizophrenia (n=11), bipolar disorder (n=2), at risk mental state (n=1), and persistent delusion disorder (n=1) of which 52% were prescribed highly obesogenic antipsychotic medications (Clozapine and Olanzapine).

- Mean baseline data suggests participants were at an increased health risk due to elevated values in mean BMI (70% were overweight or obese), waist circumference, resting heart rate, and triglycerides (see Table 1 & 2). Over 50% reported smoking daily and 85% had elevated resting blood pressure (>120/80 mm Hg).
- At 12 wk post-intervention, no changes were observed in mean BMI or waist circumference (see Table 1); 19 participants either maintained (mean 0.5 kg: range ± 2 kg) or decreased (mean -5.7 kg: range 2-7 kg) weight; 7 participants increased weight (mean 4.9 kg: range 2.0-9.6 kg).
- At 12 month post-intervention (n=16), no change was evident in mean BMI, waist circumference, or any other clinical variable (see Table 2). Positive impacts on lifestyle behaviors included 7 participants eating ~400g of fruit/vegetables daily, 2 ceased substance use, 2 ceased alcohol use, 4 ceased smoking and 5 were less sedentary.

Table 1. Comparison of anthropometric measurements at baseline, 12 weeks and 12 months.

Variable	Baseline (n=26)	12 wk post (n=26)	Baseline to 12 wk post	12 mo post (n=16)	Baseline to 12 mo post (n=16)
Body mass (kg)	94.4 (23.1)	95.1 (23.4)	<i>t</i> = 0.81 <i>p</i> = 0.43	94.8 (27.9)	<i>t</i> = 0.05 <i>p</i> = 0.96
BMI (kg.m ²)	30.7 (7.2)	31.0 (7.4)	<i>t</i> = 0.97 <i>p</i> = 0.34	31.5 (9.0)	<i>t</i> = 0.14 <i>p</i> = 0.89
Waist circumference (cm)	98.1 (17.0)	99.2 (16.8)	<i>t</i> = 0.76 <i>p</i> = 0.43	97.1 (22.1)	<i>t</i> = 0.90 <i>p</i> = 0.39

CONCLUSION

At the start of the programme, participants were already at an increased risk for cardiometabolic disorders. Findings suggest that SHAPE supported young people with psychosis to:

- attenuate their physical health risk following a 12 wk exercise and lifestyle intervention which were sustained at 12 months follow up.
- make positive lifestyle behavior changes leading to sustained improvements in weight maintenance and physical health.

Table 2. Comparison of cardiometabolic markers at baseline and 12 months post-intervention.

Variable	N	Baseline	12 months	Mean Change	<i>P</i>
BMI (kg.m ²)	16	31.4 (8.5)	31.5 (9.0)	0.1 (2.5)	0.89
Waist circumference (cm)	♂ 7 ♀ 7	100.2 (23.3)	103.5 (27.5)	3.3 (8.0)	0.32
		90.7 (13.3)	90.7 (14.4)	-0.04 (5.2)	0.98
Systolic blood pressure (mm Hg)	15	122.4 (17.0)	125.2 (17.0)	2.8 (15.3)	0.49
Diastolic blood pressure (mm Hg)	15	78.9 (9.2)	79.4 (9.4)	0.5 (9.5)	0.85
Resting heart rate (beats.min ⁻¹)	13	84.7 (21.4)	85.5 (21.3)	0.8 (18.4)	0.88
Total cholesterol (mmol.L ⁻¹)	9	4.4 (1.0)	4.3 (1.0)	-0.2 (0.7)	0.48
Triglycerides (mmol.L ⁻¹)	4	2.3 (1.9)	2.0 (2.0)	-0.4 (1.5)	0.64
HbA1 _c (mmol.mol)	7	31.8 (13.3)	37.7 (9.7)	5.9 (11.4)	0.22
Prolactin (mIU/L ⁻¹)	6	852.0 (707.3)	371.3 (239.1)	-480.7 (595.3)	0.11

GRANT FUNDED BY



Shine

IN COLLABORATION WITH

Worcestershire Health and Care NHS Trust



McClelland Centre Health & Wellbeing at the University of Worcester

FOR FURTHER INFORMATION VISIT: www.myshape.org.uk

