



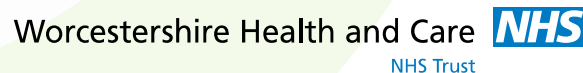
Exercise and Lifestyle Programme Improves Weight Maintenance in Young People with Psychosis: **A Service Evaluation**

Griffiths L, Smith J, Band M, Hird-Smith R, Williams B, Bold J, Bradley E, Wilkie V, Horne D

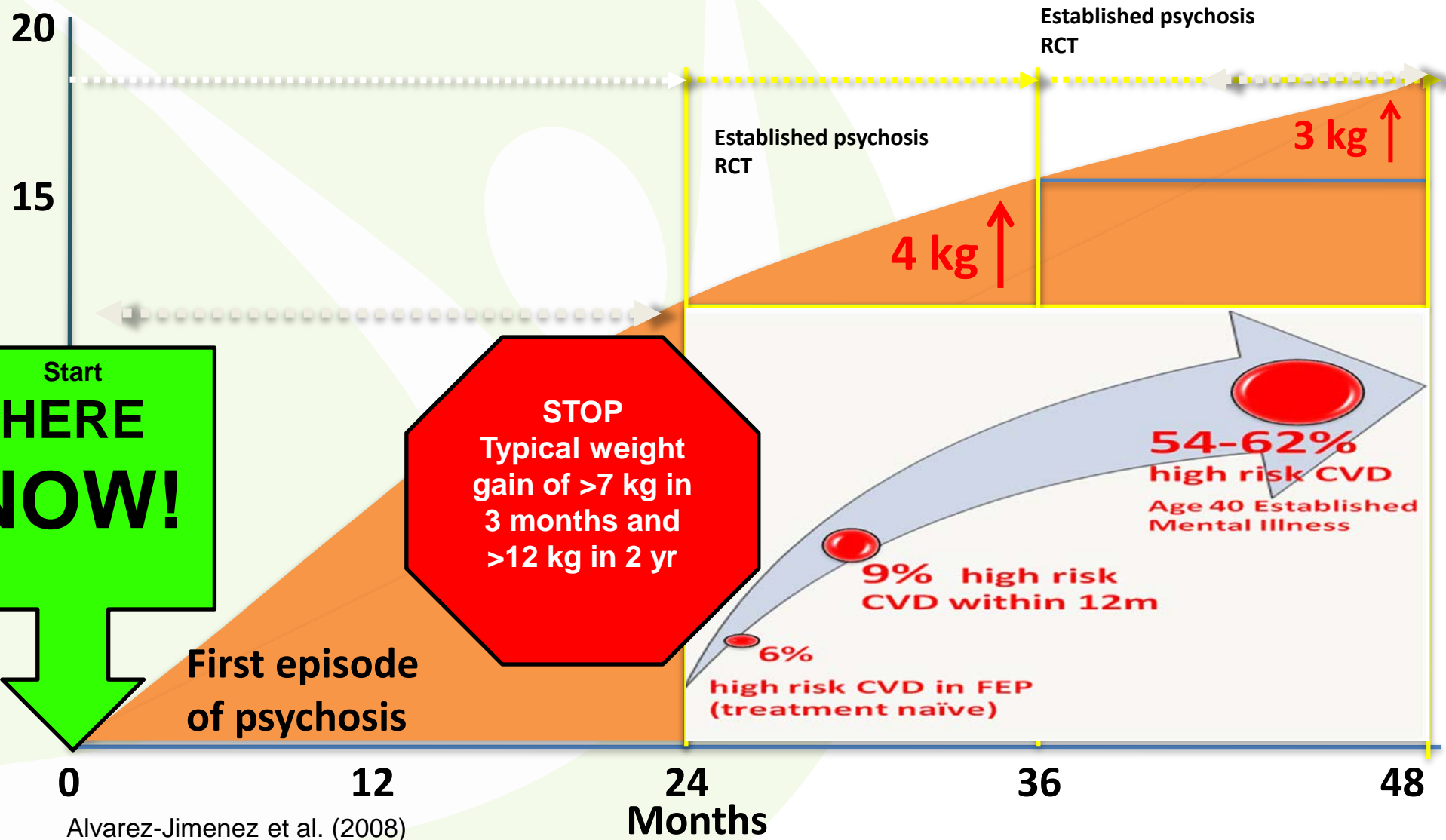
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Young people with psychosis typically have higher rates of premature cardiovascular disease and metabolic disorders compared to non-psychotic peers due to unhealthy lifestyle habits and higher rates of obesity.



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.

Aims of the service evaluation:

- To assess participant risk of CVD at baseline
- To evaluate anthropometric and key physiological markers immediately post intervention and at 12 months follow up.

Participants

Participants: Young individuals, FEP (27.5 ± 5.1 yr)
Recruitment: Community Mental Health Nurse

Programme Elements:

- ❖ Physical health assessment
- ❖ 12 wk exercise and lifestyle intervention
- ❖ Individual weekly goal setting
- ❖ SHAPE workbook
- ❖ Carers evening
- ❖ Collaboration with primary care
 - address physical health risks
 - facilitate specialist referral



SHAPE Intervention

Health educational programme

- healthy eating, nutritional advice
- tobacco, alcohol and substance use
- stress management, mindfulness
- dental and sexual health care

Group exercise session



Group Exercise Component



Exercise sessions include:

- **gym circuits and resistance training** (gym induction/equipment introduction, individualised programmes)
- **group aerobic exercise** (walking, badminton, basketball)
- **low impact exercise activities** (Tai Chi, Pilates)



Exercise prescription:

- exercise 2-4 d.wk⁻¹ for a duration of 20-30' – working up to > 4 d.wk⁻¹
- moderate intensity and engaging in a wide range of exercises
- total exercise duration ~45-60' (incl. warm-up and cool-down)

(ACSM 2014; Biddle et al., 2000)

Monitoring and Evaluation

Study design:	Within-group repeated measures
Evaluation:	Baseline, 12 wk and 12 months post-intervention
Delivery:	5 cohorts over 1 year period

Procedures

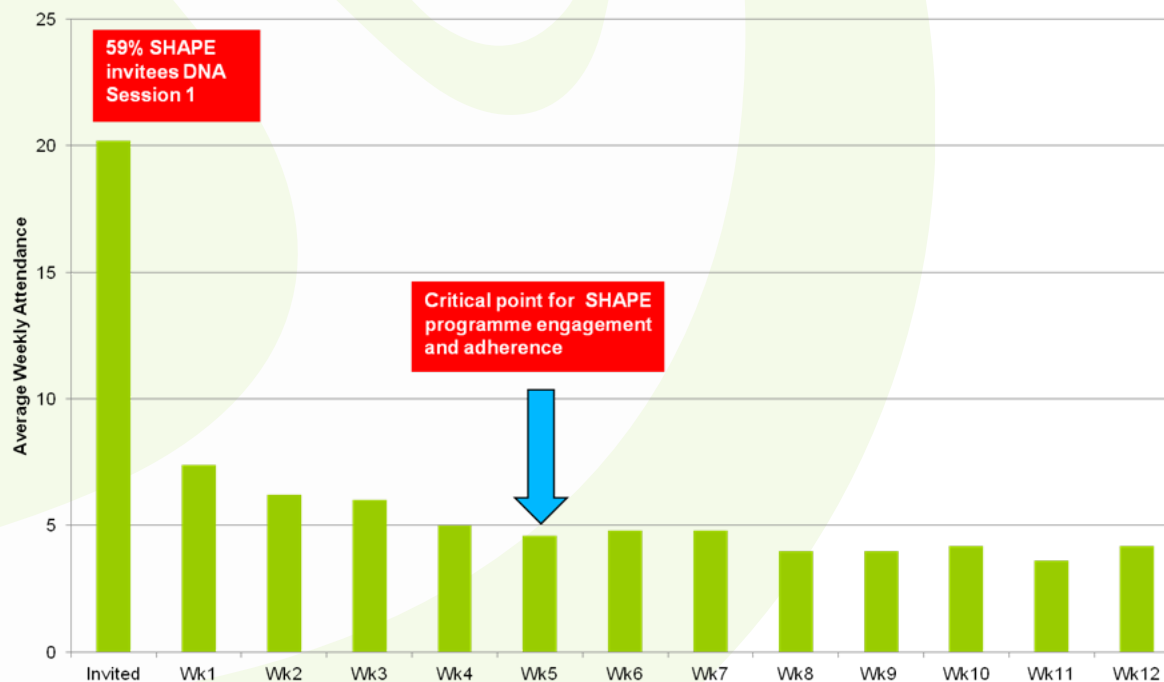
- **Engagement** (enrolment, utilisation, adherence) and dropout rates
- **Key physical health risk markers:** BMI, waist circumference, resting blood pressure, blood glucose, total serum cholesterol, prolactin
- **Self-reported lifestyle behaviours:** PA levels, diet, and tobacco, alcohol and substance use



RESULTS: Engagement

113 invited, 56 attended wk 1, 26 completed programme

- 59% DNA due to low motivation, poor mental health, distance to travel
- 41% attendees dropped out (typically before week 5)



Typical attendance pattern for individual cohorts

RESULTS: Baseline Assessment (n=56)

Young people with psychosis are already at increased physical health risk:

- Elevated levels above normal cut offs in resting heart rate, blood pressure, blood lipids, BMI and waist circumference
- 54% (n=30) overweight (BMI>25) or obese (BMI>30): of which 7% extremely obese (BMI>35)
- Over 50% smoke daily and ate <5 fruits and vegetables per day
- 43% prescribed most obesogenic antipsychotic medications (Clozapine and Olanzapine)

Results: 12 week outcomes (n=26)

Mean weight, BMI and waist circumference for group held constant (typically would expect these to increase without intervention)

- 12 maintained baseline weight (\pm 1kg)
- 7 decreased weight (2-7 kg)
- 7 increased weight (2-9 kg)
- Only 1/7 exceeded weight gain guidelines of <7 kg in 12 wk

Results compare favourably with only published study of a similar intervention programme in Australia (Curtis et al., 2015)

SHAPE 12 week Outcome Data

	UK SHAPE (n=26)	Bondi KBIM (n=16)	New South Wales Standard Care (n=12)	Paired T- test for SHAPE
Weight (kg)	0.7 (-1.0 to 2.3)	1.8 (-0.4 to 2.8)	7.8 (4.8 to 10.7)*	$t = 0.811$ $p = 0.43$
BMI (kg/m ²)	0.3 (-0.3 to 0.8)	0.4 (-0.1 to 0.9)	2.6 (1.6 to 3.6)*	$t = 0.967$ $p = 0.34$
Waist circumference (cm)	1.1 (-1.8 to 3.9)	0.1 (-2.1 to 2.2)	7.1 (4.8 to 9.4)*	$t = 0.757$ $p = 0.43$

Note: Data presented as mean within-group change (95% CI); *, $p < 0.05$.
Results compared with Bondi 'Keeping Body in Mind' (KBIM) Programme
(Curtis et al. 2015, EIP)

SHAPE 12 month Outcome Data

Variable	Baseline (n=26)	12 weeks (n=26)	Baseline to 12 wk post* (n = 26)	12 months (n=16)	Baseline to 12 months post* (n=16)
Body mass (kg)	94.4 (23.1)	95.1 (23.4)	t = 0.811 p = 0.43	94.8 (27.9)	t = 0.049 p = 0.96
BMI (kg.m ²)	30.7 (7.2)	31.0 (7.4)	t = 0.967 p = 0.34	31.5 (9.0)	t = 0.138 p = 0.89
Waist circumference (cm)	98.1 (17.0)	99.2 (16.8)	t = 0.757 p = 0.43	97.1 (22.1)	t = 0.900 p = 0.39

*, analysed using Paired Sample T-test.

Comparison of cardiometabolic markers

Variable	N	Baseline	12 months	Mean Change	<i>P</i> value
Body mass index	16	31.4 (8.5)	31.5 (9.0)	0.09 (2.5)	0.89
Waist circumference (cm)	♂ 7	100.2 (23.3)	103.5 (27.5)	3.3 (8.0)	0.32
	♀ 7	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
HbA _{1c} (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

SHAPE 12 Month Outcomes (n=16)

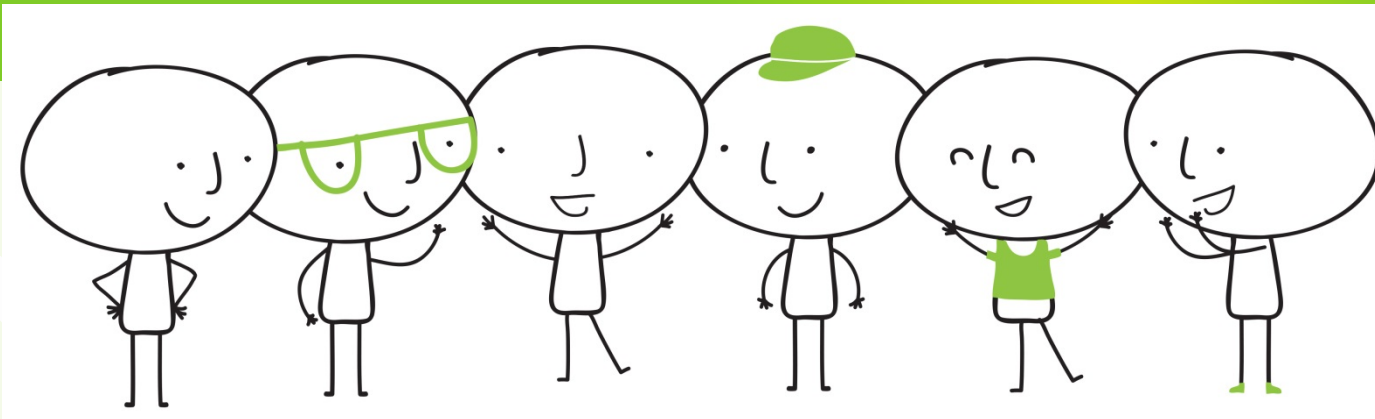
Mean weight, BMI, waist circumference and other risk indicators held constant (typically would expect these to increase without intervention)

- 2 increased weight > 5 kg

Positive impact on healthy lifestyle behaviours:

- 7 reported eating healthier (eating 5 fruits and vegetables per day)
- 2 ceased substance use
- 2 ceased alcohol use
- 4 ceased smoking
- 5 were less sedentary (>90 minutes per week)

Participant Feedback



*“...I quite liked how it **structured my day**, because before, I would not do anything, so you feel like you’ve accomplished after coming and that’s **good for my self-esteem**”.*

*“... it was always quite informal and ... a relaxed laid back atmosphere when we were doing everything, nothing was said in dictator kind of a way **it was an open discussion on options we have over our lifestyle** rather than like “you’re not eating this or you’re not eating that or get out and do that!” it was more of **make your own decisions based on our recommendations**...which was good.*

*“...because of the nutrition side of things, I’m **trying to concentrate more on healthy eating.**”*

*“...once I’ve done the exercise, **I feel loads better**, like a weight has been lifted, it enables me to carry on for the day, for the rest of the week. **It really motivates me**, just by the fact that it lifts me. “*

Lessons Learnt



- **Young people with psychosis can reduce/delay their physical health risk following a 12 wk exercise and lifestyle intervention and benefits appear to be sustained at 12 months follow up.**
- Profiling physical health needs of EIP clients has markedly improved EIP service physical health assessment, monitoring and follow up processes
- Service user involvement in programme design and feedback provided an iterative service improvement loop and enhanced programme evaluation