

PHASE 1 OUTCOMES OF COMMUNITY-BASED ADOLESCENT OVERWEIGHT MANAGEMENT: THE LOOZIT® STUDY

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Adolescent overweight and obesity

- Affects approximately 1 in 4 Australian adolescents
- Lifestyle modification is the cornerstone of prevention and management
- 27 RCTs involving lifestyle interventions in adolescent obesity management but few studies:
 - are based in community settings
 - offer extended therapeutic contact and follow up to 24 months (Cochrane Review 2009)



The Loozit® Study

Aim of Phase 1:

To examine the short-term (0-2 month) outcomes of a modest intensity, community-based, lifestyle program for weight management in overweight and obese adolescents.

Study design:

- Two arm randomised controlled trial
- 24 month lifestyle intervention with two phases
- Target sample size: 168
- Study Protocol Published (Shrewsbury et al, BMC Public Health 2009)



Participant recruitment

Inclusion criteria:

- overweight-moderately obese 13-17 year olds
- nil medications or significant medical problems
- available for group session times and can speak English
- landline telephone +/- home internet +/- mobile phone access

Participants were recruited 2006-09 via:

- schools
- media
- health professionals
- area health services
- community venues



The Intervention

Study arm	Phase 1 (0-2 months)	Phase 2 (2-24 months)	
Group program only	7 weekly group sessions for adolescents & parents	7 'booster' groups sessions for adolescents only	None
Group program + additional therapeutic contact			Adolescents receive support via telephone coaching ; SMS text messages or email ~once/fortnight

Evidenced based content with a focus on:

- Improving dietary intake and eating patterns
- ↑ Physical activity
- ↓ Sedentary behaviour
- ↑ Self esteem



Adolescent outcome measures

Primary

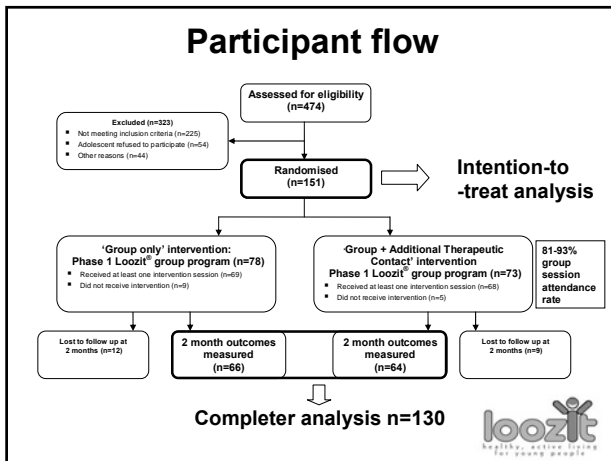
- ΔBMI z-score and Δwaist:height index

} blinded outcome assessor

Secondary

- Δ metabolic indicators
 - dietary intake (Flood et al, 2005; Booth et al, 2005)
 - physical activity & sedentary behaviour (Telford et al, 2004)
- Δ psycho-social well-being
 - body shape satisfaction (Stunkard, 2000)
 - Mental Health Inventory (MHI-5) Score (Berwick et al, 1991)
 - MacArthur Scale of social status (Goodman et al, 2001)
 - Harter Self-Perception Profile (Harter, 1988)
- Program satisfaction (incl. parents) (Golley et al, 2007)






Participant & Family Profile

Characteristics (n=151)	%	Median (IQR)
Adolescent		
Age (years)		13.9 (13.4, 14.8)
Female	52	
English is primary language spoken at home	68	
Distance from treatment centre (km)		13.3 (7.4, 19.4)
SEIFA*		1022.00 (995, 1138)
Parental		
Dual parent households	75	
Australian born:		
Mothers	59	
Fathers	49	
University degree:		
Mothers	38	
Fathers	31	

* Socioeconomic Index for Areas – Index of relative socioeconomic advantage and disadvantage (Sydney mean: 1088)

Baseline to 2 month changes...



Anthropometry

Anthropometry	n	Baseline	2 months	Δ Mean (SD)	Δ Median (IQR ^a)	P value ^b
Weight (kg)	150	83.2 (14.4)	83.0 (14.5)	-0.16 (2.1)	0.0 (-1.2, 1.0)	0.409
Waist (cm)	151	96.5 (10.9)	94.4 (10.3)	-2.1 (8.3)	-0.4 (-6.3, 2.6)	0.006
Waist:height	151	0.59 (0.06)	0.57 (0.06)	-0.01 (0.05)	0.0 (-0.04, 0.01)	0.003
BMI (kg/m ²)	150	30.8 (3.8)	30.6 (3.7)	-0.23 (0.76)	-0.02 (-0.64, 0.17)	<0.001
BMI z-score	150	2.02	1.98	-0.04	-0.03	<0.001

^a Interquartile range
^b Wilcoxon Signed Ranks Test
^c Paired samples T Test

Metabolic Profile

	n	Baseline	2 months	Δ B to 2	P	
		Median (IQR)	Median (IQR)	Mean (SD)	Median (IQR)	Value
Triglycerides (mmol/L)	125	1.1 (0.8, 1.4)	1.1 (0.8, 1.5)	0 (0.6)	0.0 (-0.2, +0.2)	0.561
Cholesterol (mmol/L)						
Total	125	4.3 (3.8, 5.0)	4.2 (3.7, 4.8)	-0.1 (0.4)	0.0 (-0.4, +0.1)	0.004
LDL	123	2.6 (2.1, 3.0)	2.4 (2.0, 3.0)	-0.1 (0.4)	0.0 (-0.3, +0.1)	0.005
HDL	125	1.2 (1.0, 1.4)	1.2 (1.0, 1.4)	0.0 (0.2)	0.0 (-0.1, +0.1)	0.083
Glucose (mmol/L)	125	4.8 (4.5, 5.1)	4.7 (4.4, 5.0)	-0.1 (0.5)	0.0 (-0.3, +0.1)	0.130
Insulin (mU/L)	125	18.0 (14.0, 25.0)	17.0 (12.0, 24.0)	-0.7 (8.6)	0.0 (-5.0, +3.5)	0.586

*Mean (SD)

Food intake & eating behaviours

	n	Serves	Baseline (%)	2 months (%)	P value*
Core foods					
Vegetables					
Eats lunch	123	≥ 4/day	26	38	0.040
Eats dinner	128	Everyday	79	88	0.458
Eats breakfast	128	Everyday	82	87	0.238
Eats dinner with most of family	124	≥ once weekly	32	51	0.001
Plays at least 1 hour of sport	122	≥ once weekly	73	74	0.881
Plays at least 1 hour of TV	128	Never or rarely	33	20	0.185
Drinks					
Water	123	≥ 6 cups/day	24	38	0.009
Diet drinks	117	Never or rarely	40	50	0.058
Fruit juice/drink	120	Never or rarely	28	43	0.002
Regular sweetened drinks	120	Never or rarely	46	63	0.001

Psycho-social measures

	Explanation	Baseline	2 month	Change	P value
		Mean (SD)			
Body shape satisfaction	Difference between perceived and desired figure	2.5 (1.0)	2.1 (0.9)	0.4 (0.9)	<0.001
Mental Health Inventory (MHI-5) Score	5= most favourable health 20=least favourable health	13.2 (5.6)	12.2 (4.1)	-1.0 (3.5)	0.002
MacArthur Scale of subjective social status	1=extremely low 10=extremely high	6.4 (2.0)	6.7 (2.0)	0.2 (1.9)	0.159



Conclusions

- The reduction in the level of overweight was clinically small but statistically significant.
- This was accompanied by improvements:
 - total and LDL cholesterol
 - body satisfaction
 - mental health
 - adherence to various dietary recommendations
- Future follow-up at 12 and 24 months post-baseline will confirm if these changes are sustained



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CHW Staff

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Predictors of BMI change

Bivariate results

Baseline:

- Demographic characteristics
- Anthropometry
- Psycho-social measures
- Cohort number

Baseline to 2 month:

- Adolescent and parent attendance at group sessions
- Change in dietary intake
- Change in levels of physical activity and sedentary behaviour
- Change in psycho-social measures



Results: participant flow

