

Differences and similarities between perceived difficult to treat groups

Janet Franklin, RPAH Hospital

Co investigators: Elisia Manson
Georgina Loughnan, Kate Steinbeck



Background



- Many Groups Perceived to be difficult to treat e.g.
- Patients with
 - Obesity Syndromes or Intellectual Disability (ID)
 - Mental Illness
 - Diabetes
- Increased Prevalence obesity
 - Syndrome (ID) (Yamaki 2009, Bhaumik 2008)
 - Mental Illness (Richardson 2005, Muir Cochrane 2006)
 - Diabetics (Kamla-Raj 2009)



Background



- Why are they perceived to be difficult
 - Cognition issues
 - Poor adherence/ lack of interest
 - Depression
 - Multiple pharmacotherapy treatments
 - Weight gain due to pharmacotherapy treatments
 - (antipsychotic medication and some diabetic treatments such as sulphonureas Insulin)
 - Metabolic profiles
 - Under cognition of medical risk (not seen as a priority)
- Metabolism and Obesity Services
 - Tertiary service
 - Patient BMI > 35 kg/m²
 - Referred from across NSW (most difficult patients)
 - Tried many other interventions in the past



Aims



- 1. Are there differences at baseline between the groups ?
- 2. Do all groups achieve weight loss?
- 3. Do all groups achieve the same weight loss?
- 4. Are there differences at follow-up?



Classification



- Syndrome (ID) Patients
 - Patients that had a recognised genetic component to their obesity or a diagnosed ID e.g. PWS patients, Soto's, Bardet Biedl, post craniopharyngioma, Down Syndrome etc
- Mental Illness
 - Patients who were prescribed pharmacotherapy treatment for mental illness at the time of their initial consult e.g. schizophrenia, bi polar, depression etc
- Diabetic Patients
 - Any patient with a diagnosis of diabetes or IGT plus pharmacotherapy
- Control all other patients



Hierarchy of Classification



- 1. Syndrome / ID
 - 2. Mental Illness
 - 3. Diabetes
 - 4. Control
- 2005-2008 completed an initial Metabolic Assessment
- N=1158 included in the analysis



Metabolic Assessment

- Anthropometry
- RMR
- Blood tests
- Body composition
- FFQ
 - (Healthy habits and fat intake)
- Eating Inventory
 - (Restraint, Disinhibition, Hunger)
- Sub Maximal fitness appraisal

□ Preliminary Results



Co morbidity breakdown

International Diagnostic Classification of Disease	Control	Mental Illness	Syndrome (ID)	Diabetic	Statistic
	n= 609 (%)	n=182 (%)	n=47 (%)	n=317 (%)	
Blood circulation	1.2	2.2	0.0	2.2	$P = .444$
Congenital	38.4	31.5	11.1	73.0	$P < .001$
Digestive	0.3	0.6	95.0	0.3	$P < .001$
Endocrine	19.9	28.7	2.2	30.8	$P < .001$
Genitourinary	46.2	55.8	35.6	97.8	$P < .001$
Infectious	6.9	5.5	6.7	11.5	$P = .049$
Mental health	2.3	3.3	0.0	1.6	$P = .448$
Musculoskeletal	16.4	93.9	62.2	28.7	$P < .001$
Neoplasm	39.6	42.6	15.6	53.7	$P < .001$
Nervous	2.2	1.7	2.2	1.9	$P = .974$
Respiratory	34.4	40.3	40.0	51.3	$P < .001$
Skin problems	23.6	25.4	24.4	25.4	$P = .962$
	5.0	2.2	6.7	5.7	$P = .306$

Results Baseline

	n	M/F Ratio	Age	No Meds	Number Co-morbidities
		%	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)
Control	604	30.2 / 69.8	47.8 (46.3-49.2)	3.2 (2.9-3.4)	3.8 (3.5-4.0)
Mental Illness	182	28.0 / 71.4	44.0 (46.3-49.2)	4.0 (3.6-4.4)	4.5 (4.1-4.8)
Obesity Syndrome (ID)	47	25.5 / 74.5	31.1 (26.1-36.1)	3.0 (2.2-3.8)	3.0 (2.3-3.7)
Diabetics	315	45.1 / 54.9	52.1 (50.6-53.6)	6.1 (5.7-6.5)	5.6 (5.3-5.8)
Statistics		$P < .001$	$P < .001$	$P < .001$	$P < .001$

- = $P < .05$ higher than control
- = $P < .05$ lower than control



Results Baseline

	n	Weight (kg)	HT (m)	BMI (kg/m ²)	Waist (cm)	Sys (mmHg)	Dia (mmHg)
		Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)
Control	604	125.2 (122.6-127.8)	1.67 (1.66-1.67)	44.8 (44.1-45.6)	121.0 (118.7-123.2)	126.8 (124.3-129.4)	77.4 (75.8-79.1)
Mental Illness	182	126.9 (122.5-131.3)	1.66 (1.65-1.68)	45.8 (44.4-47.3)	123.3 (119.8-126.9)	124.7 (120.5-129.0)	77.0 (74.1-79.9)
Obesity Syndrome (ID)	47	107.0 (98.0-116.0)	1.60 (1.56-1.64)	41.3 (38.8-43.8)	113.9 (103.8-124.0)	120.8 (98.1-143.6)	69.8 (60.1-79.5)
Diabetics	315	128.9 (125.5-132.5)	1.67 (1.66-1.68)	46.2 (45.2-47.2)	129.9 (127.2-132.6)	133.7 (129.7-137.7)	76.7 (73.9-79.5)
Statistic		$P < .001$	$P = .018$	$P < .001$	$P < .001$	$P < .001$	$P = .058$

- = $P < .05$ from control
- = $P < .05$ from control for marginal sig overall



Results Baseline

	n	Healthy Habits	Fat Score	Restraint	Disinhibition	Hunger	Self Esteem
		Mean (95CI)	Mean (95CI)	Mean (95CI)	Mean (95CI)	Mean (95CI)	Mean (95CI)
Control	418	42.3 (41.4-43.3)	15.5 (14.5-16.5)	9.2 (8.8-9.6)	9.3 (8.9-9.7)	6.3 (5.9-6.7)	2.4 (2.3-2.5)
Mental Illness	128	42.8 (40.9-44.7)	16.4 (14.9-17.9)	8.8 (8.1-9.5)	10.4 (9.8-11.0)	7.0 (6.3-7.6)	2.1 (2.0-2.2)
Obesity Syndrome (ID)	3	37.7 (28.3-47.1)	19.3 (-4.0-42.4)	2.0 (-3.0-7.0)	8.7 (-3.8-21.2)	6.7 (-9.9-23.2)	2.4 (0.1-4.7)
Diabetics	213	45.0 (43.7-46.4)	13.6 (12.4-14.7)	9.3 (8.8-9.8)	9.1 (8.6-9.6)	6.6 (6.1-7.2)	2.3 (2.2-2.4)
Statistic		$P = .005$	$P = .099$	$P = .055$	$P < .001$	$P = .169$	$P < .001$

- = $P < .05$ from control
- = $P < .05$ from control for marginal sig overall



Results Baseline sub max fitness test

	n	55 km/hr	65 km/hr	75 km/hr	PER	Predicted Vo2 Max
		Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)
Control	113	2.2 (2.0-2.3)	3.7 (3.6-3.9)	4.8 (4.6-4.9)	12.9 (12.6-13.1)	16.8 (16.2-17.3)
Mental Illness	23	1.7 (1.4-2.0)	3.3 (2.9-3.7)	4.4 (4.0-4.7)	13.4 (12.9-14.0)	17.3 (15.5-19.1)
Obesity Syndrome (ID)	3	2.4 (-0.3-5.2)	3.5 (2.7-4.4)	4.8 (4.5-5.2)	13.3 (10.5-15.9)	17.6 (13.7-21.6)
Diabetes	36	1.5 (1.2-1.7)	2.9 (2.6-3.3)	4.0 (3.7-4.3)	13.2 (12.8-13.6)	16.7 (15.6-17.7)
Statistics		$P < .001$	$P < .001$	$P < .001$	$P = .027$	$P = .665$

- = $P < .05$ lower than control
- = $P < .05$ higher than control



Follow-up data

	Baseline	Follow up	Lost to F/U	number of visits	months since initial Visit
	n	n	%	n	n
Control	604	372	38.41%	6.7 (5.9-7.5)	12.0 (10.6-13.3)
Mental Illness	182	121	33.52%	5.6 (4.6-6.5)	11.6 (8.7-14.4)
Obesity Syndrome (ID)	47	38	19.15%	6.9 (4.4-9.4)	17.2 (11.3-23.1)
Diabetics	315	189	40.00%	5.3 (4.3-6.2)	11.5 (9.7-13.3)
Statistic			$P < 0.014$	$P = 0.151$	$P = 0.054$

- = $P < .05$ lower than control
 = $P < .05$ from control for marginal sig overall

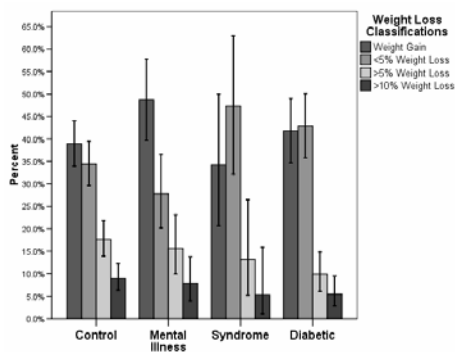
Follow up data

	Follow up	Wt	Wt loss	% wt Loss	%EWL
	n	(kg)	(kg)	(%)	(%)
Control	372	121.4 (118.1-124.7)	3.3 (2.2-4.4)	2.3 (1.6-3.0)	5.8 (3.9-7.6)
Mental Illness	121	126.2 (119.8-132.5)	0.9 (-0.7-2.6)	1.0 (-0.3-2.3)	3.4 (0.0-6.8)
Obesity Syndrome (ID)	38	106.3 (96.0-116.6)	1.6 (-0.4-3.6)	1.7 (-0.1-3.4)	4.5 (-0.8-9.8)
Diabetics	189	127.1 (122.4-131.9)	1.7 (0.7-2.8)	1.4 (0.6-2.1)	3.3 (1.5-5.1)
Statistic		$P < .002$	$P = 0.138$	$P = 0.197$	$P = 0.197$

- = $P < .05$ from control for marginal sig overall, = $P < .05$ difference from baseline

	Follow up	BMI	BMI Loss	Waist	Waist Loss
	n	(kg/m ²)	(kg/m ²)	(cm)	(cm)
Control	372	43.8 (42.8-44.7)	1.2 (0.8-1.6)	120.4 (115.5-125.3)	5.6 (2.9-8.4)
Mental Illness	121	45.5 (43.3-47.6)	1.0 (-0.2-2.3)	121.4 (111.1-131.8)	-1.2 (-5.0-2.6)
Obesity Syndrome (ID)	38	40.7 (38.1-43.4)	0.7 (-0.1-1.5)	101.3 (93.1-109.5)	1.9 (-6.1-9.8)
Diabetics	189	45.9 (44.6-47.4)	0.9 (0.3-1.5)	126.2 (119.5-132.9)	1.1 (-1.4-3.6)
Statistic		$P < .007$	$P = 0.273$	$P < .007$	$P = 0.057$

Overall Weight Classification



Summary

- Differences at Baseline
 - Mentally ill patients, ID patients and Diabetics have many characteristics at baseline that might make weight loss more difficult
 - Multiple medications
 - Multiple co-morbidities
 - Mentally ill patients report more emotional eating and lower self esteem
 - Mentally ill patients have poorer fitness and perceive exercise to be harder than other groups
 - ID patients have lower restraint
 - ID patients younger, lighter, smaller waists lower BP
 - Diabetics - larger waist; higher SYS BP
 - Diabetics have better food habits

Summary follow up

- One in three patients is lost to follow-up
- Patients with Syndrome (ID) often remain in treatment due to structured support systems
- The majority of patients achieve weight maintenance or weight loss
- Mentally ill patients who have little community support remain a difficult group to treat
 - BUT NOT IMPOSSIBLE 23% achieve >5% wt loss
- No difference in weight change amongst the groups at follow-up

Conclusion

- Specific groups for Mentally Ill patients may be needed to support weight loss
- Recognition of the difficulties of different treatment groups important
- Recognition of factors that may make weight loss difficult is important
- Recognition that all groups can achieve weight loss and therefore should be treated

Acknowledgements



□ Staff at Metabolism and Obesity Services

- Elisia Manson (CNC)
- Georgina Loughnan (Physiotherapist)
- Anne Marie Droulers (Social Worker)
- Kate Steinbeck (Endocrinologist)
- Ian Catterson (Endocrinologist)
- Tania Markovic (Endocrinologist)
- Nic Kormas (Endocrinologist)
- Namson Lau (Endocrinologist)

