

Obesity prevention and management in the mentally ill population: Evidence based strategies

Chidi Chima

MBBS, MRCPsych, MPH, PhD



Who is obese?

	BMI (kg/m ²)
Underweight	< 18.5
Ideal weight	18.5 – 24.9
Overweight	25 – 29.9
Class 1 obesity	30 – 34.9
Class 2 obesity	35 – 39.9
Class 3 obesity	= / > 40

Obesity burden

- Raised mortality (median survival 8-10 yrs. less than the general population)
- Higher morbidity – e.g. 18 fold increase of type 2 DM compared to the general population
- Indirect cost – up to £27 billion in 2015
- Obesity treatment costs £5b annually (expected to double by 2050)

Sturm, R. Arch Intern Med; 2003; 163(18): 2146-2148

WHO Technical Report Series 854. Geneva, 1995

National obesity Observatory, 2010

UK Dept of Health, 2013

Recommended prevention strategies

- Provision of supportive environment
- Limiting energy intake
- Dietary modification
- Increase physical activities
- Political commitment – availability of built-in environment, availability of healthy food
- Responsibility by food industry – broad range of choices, reduction of fat/sugar/salt; and responsible marketing

**WHO, 2015

Evidence-based strategies

- Education
- Behavioral Counseling
- Life style modification
- Physical activity
- Dietary interventions
- Pharmacologic treatment
- Surgical treatment

Behavioural counselling

- Cross-sectional study - Community team clinician (n = 154)

Focus – counselling on CVD risks

26.6% counselled > half of their patients annually

Formal training and not being obese were predictors of counselling among clinicians

- Cross-sectional study – WMAB (n = 164)

Focus – application of SCT constructs (knowledge, expectation, situational perception, goal setting and self efficacy) in predicting weight management advice behaviour (WMAB).

All except expectation had association and are independent predictors of WMAB.

Chwastiak LA et al Psychosomatics 2013; 54: 328-335

Chima C. PhD Thesis 2017. ProQuest



Lifestyle modification

- In SHAPE RCT study (n = 133)

Weekly sessions with FT + membership of a fitness club *Vs* One year of membership + education

Improvement in fitness every quarter up to a year but no difference in weight loss between groups

- ACHIEVE RCT study (n = 291)

Group and individual weight mgt sessions + group exercise sessions

>5% reduction in IBW (37.8% Intervention group in comparison to 22.7% in control group in 18 months)

Mean between group difference in weight – (-3.2kg)

Bartel SJ et al. Psychiatr Serv 2013; 64(8): 729-736

Daumit GL et al. N Engl J Med 2013

Lifestyle modification (cont'd)

- STRIDE study (n = 200)

Implementation of STRIDE core intervention components -

Physical activity, keeping food records, personalised plans etc.

>5% reduction in IBW (40% Intervention group in comparison to 17% in control group in 6 months)

Green CA et al. Am J Psychiatry 2015 jan; 172(1):71-81

Pharmacologic treatment

- RCT - Switching of neuroleptic medications (Aripiprazole = 109; Current medication - 106)

Focus - Switching + behaviorally oriented diet + exercise regime)

Non-HDL cholesterol, triglyceride and weight (2.9kg) reduction after 24 weeks

- RCT – Metformin

Focus - Placebo, Metformin (750mg/d), Metformin + Lifestyle intervention, Lifestyle intervention alone (n = 128)

Stable mental state for all participants, M+L group = reduction in mean BMI, waist circumference and insulin resistance index

Stroup TS, et al. Am J Psychiatry 2011; 168: 947-956

Wu et al. Lifestyle Intervention and Metformin for Treatment of Antipsychotic-Induced Weight Gain. JAMA 2008 Jan 9;299(2):185-93.

Pharmacologic treatment (cont'd)

- Wu et al. Results

	Metformin + lifestyle	Placebo	Metformin alone	Lifestyle alone
BMI	1.8	1.2*	1.2	0.5
Waist Circum.	2.0 cm	2.2 cm*	1.3 cm	---
Insulin resistance index	3.6	0.4*	3.5	1.0

* Mean increase

Wu et al. Lifestyle Intervention and Metformin for Treatment of Antipsychotic-Induced Weight Gain. JAMA 2008 Jan 9;299(2):185-93.

Pharmacologic treatment (cont'd)

- RCT double blind study - Metformin (n = 148)

Focus – Metformin 1g BD as tolerated, diet and exercise counselling (16 weeks)

Mean change in BW – 3kg in Metformin group in comparison to 1kg in placebo group.

- RCT double blind study – Liraglutide (n = 3731)

Focus – 3mg subcut Liraglutide vs Placebo

Mean weight loss at week 56 – (8.4+/-7.3kg vs 2.8+/-6.5kg)

63% intervention group vs 27.1% control group lost >5% BW

33.3% intervention group vs 10.6% control group lost >10% BW

Jarskog LF, et al. Am J Psychiatry 2013; 170:1032-1040

• Pi-Sunyer X, et al. N Engl J Med 373;1 NEJM.ORG July 2, 2015

Pharmacologic treatment (cont'd)

- Liraglutide - Critical review

5 RCT articles (Liraglutide vs Placebo)

Weight loss of 4-6kg

Greater proportion achieving at least 5% and 10% weight loss

- Other medications licensed for weight loss

Phentermine-Topiramate

Lorcaserin

Naltrexone/Bupropion

Orlistat

Mehta A, et al. Obesity Science and Practice 2016; 3: 3-14

Das C, et al. Annals of Clinical Psychiatry 2012; 24(3): 225-239



Surgical intervention – bariatric

When is bariatric surgery indicated?

- Class 3 obesity – BMI > 40
- Class 2 obesity – BMI 35 – 39.9 with associated medical conditions (DM, sleep apnoea)
- Class 1 obesity – BMI 30 – 34.9 with poorly controlled type 2 DM

NHLBI, NIH Publication No. 98-4083, 1998

Surgical intervention (cont'd)

- Types – Adjustable gastric band (AGB), Sleeve gastrectomy (SG) and Roux-en-Y gastric bypass (RYGB)
- Randomised non-blinded study (n = 150) over 12 months

	Change in BMI
Medical therapy alone (MT)	-5.4 +/- 8kg
MT + RYGB	-29 +/- 9kg
MT + SG	-25 +/- 8.5kg

- Reduction in glycaemic control, improved insulin resistance index, reduction in need for use of medications for controlling of glucose, lipid, BP

Evaluation by psychiatrist

Pre - surgery

- Thorough assessment with the view to identify any psychiatric and substance use disorders

Post – surgery

- Offer of psychosocial support
- Assessment and management of possible Eating disorder
- Alcohol use disorder **
- Potential changes in absorption of neuroleptic medications
- Emergence of risky behaviours – self-harm and suicide
- Concerns with changes in body image

Sockalingam S, et al. Am J Psych 2017; 174(1): 81-82

King WC, et al. JAMA. 2012; 307(23): 2516-2525**



Overall role of psychiatrists

- Routine weight monitoring
- Office based counselling
- Development of weight management strategies in our units
- Consideration of neuroleptic medications with lesser metabolic risk
- Consideration of weight loss medications
- Appropriateness of surgical intervention to be considered
- Regular monitoring with the view to identify obesity complications