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The impact of psychotropic weight gain on people with psychosis – patient perspectives and attitudes

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Abstract

Objectives: To explore weight gain and its impact on quality of life, body image and medical adherence in patients suffering from psychosis. To investigate what methods they tried to lose weight and which medications they thought impacted on their weight.

Method: This was a cross-sectional study of patients belonging to the Mental Health Rehabilitation service of Inner-West Area Mental Health Service/Royal Melbourne Hospital, Melbourne, Victoria. Of 66 patients of the service, 63 were offered participation; 42 completed all components of survey. The chief outcome measures were the Impact of Weight on Quality of Life (IWQOL-lite) Scale, a set of nine figural stimuli to measure body image and a questionnaire addressing medication adherence and methods used to lose weight. In addition, anthropometric measures were taken.

Results: A substantial proportion of patients were overweight or obese. Subjects underestimated their weight and wished to be thinner. Subjects indicated that their quality of life had been affected by their weight gain across a number of domains. A majority believed their medication had contributed to their weight gain, and as a result had considered ceasing it.

Conclusions: Patients' weight gain and the management thereof needs to be an integral part of overall treatment planning and monitoring for people on antipsychotic medications.

Declaration of interest: None.

Keywords: *Weight gain, psychotropics, quality of life, psychosis, medical adherence*

Introduction

Antipsychotic medications are the cornerstone of the treatment of disorders such as schizophrenia. Even though the newer "atypical" agents carry a lower burden than the older agents in terms of extrapyramidal side effects, they are associated with other unwanted effects, including increased weight gain (Angermeyer & Matschinger, 2000; Brown, Birtwistle, Roe, & Thompson, 1999; Kurzthaler, 2001). Weight gain, in addition to lifestyle factors such as cigarette smoking, diets high in fats, and lack of physical exercise place people with these disorders at risk for medical problems such as ischaemic heart disease (Brown et al., 1999).

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Other consequences of weight gain in psychosis such as the impact on quality of life, medication adherence, and body image satisfaction, have largely been neglected by researchers. It has been reported that weight gain on antipsychotic medication is the second most frequent negative effect on quality of life but is ranked first in terms of “bothersomeness” (Angermeyer & Matschinger, 2000). The psychological distress and quality-of-life impairment caused by weight gain may also interfere with medication adherence. It has been shown to be a significant factor in poor adherence with antipsychotics and other psychiatric medications such as lithium (Kurzthaler, 2001). Allison et al. (2003) suggest that there is limited quantitative data clearly showing a correlation between weight gain on antipsychotics and reduced compliance with medication.

Given these issues, we explored how quality of life and body image are impacted by antipsychotic-induced weight gain. We also assessed subjects’ perception of which medications had contributed to their weight gain, methods they had employed to lose weight, and how weight gain had affected their adherence to medication. Our aim was to establish whether there is a need to improve weight-loss management in those taking psychotropics, address body image issues and thus improve medication adherence.

Method

This cross sectional study of people with psychosis taking psychotropic medication included 42 subjects recruited from the Mobile Support Treatment team (MST) and Community Care Unit (CCU) within the Inner West Area Mental Health Service of Melbourne. Subjects participated in two areas of study: (i) physical measures, and (ii) quality of life (QOL), body image and medication adherence questionnaires. These tests were performed either in the outpatient setting or in the subject’s place of residence.

Physical measures

Anthropometric testing including weight, height, waist and hip circumference.

Demographics and lifestyle

Using a standard proforma, we recorded age, gender, obesity co-morbidities, and lifestyle issues such as number of cigarettes smoked, alcohol imbibed, and takeaway meals consumed. The extent of any regular physical exercise was also recorded.

Quality of life, medication adherence and body image

We employed the Impact of Weight on Quality of Life (IWQOL-lite) Scale to evaluate the impact of obesity on quality of life (Abraham, 2003). This is a 31-item questionnaire covering obesity-specific health-related quality of life (HRQOL) issues. It consists of a total score and scores on each of five subscales, viz.: physical function, self-esteem, sexual life, public distress, and work. Each item is rated 1–5 according to whether the specific aspect of their quality of life was affected always, usually, sometimes, rarely or never. All items apart from item four begin with the phrase “because of my weight...” (Kolotkin, Crosby, Kosloski, & Williams, 2001). The IWQOL-lite has been used in a number studies related to obesity (Boan, Kolotkin, Westman, McMahon, & Grant, 2004; Fontaine, 2002; Heshka, Anderson, Atkinson, Greenway, Hill & Phinney, 2003; Kolotkin, Crosby, Pendleton, Strong, Gress, & Adams, 2003; Kolotkin, Crosby, & Williams, 2002; Kolotkin, Head,

Hamilton, & Tse, 1995) and it is a clinically sensitive and valid measure of obesity-specific quality of life (Prioretto & Baur, 2004). We are aware of no prior study using it in a sample of people with psychotic disorders.

Body image was assessed using a set of nine figural stimuli representing increasing body size. Subjects were asked which figure they believed best represented their body shape, and then which figure they would prefer to be. These two choices were compared with which figure their actual body mass index (BMI) represented (Bulik, Wade, Heath, Martin, Stunkard, & Eaves, 2001).

Subjects were also asked which psychotropics they perceived to have contributed to their weight gain (“do you think your medication has contributed to your weight?”; “if yes, which one(s)?”); what they had done to lose weight (Abraham, 2003); and whether they had considered stopping their medication or missed doses because of their weight gain.

Ethics approval

Ethics approval was granted by the North Western Area Mental Health Research and Ethics Committee of Victoria. All participants gave written informed consent to participate.

Statistical analysis

Proportions were tested using binomial tests. Body image data were analysed using repeated measures ANOVA and *t*-tests. Regression and *t*-tests were used for analysis of quality of life data.

Results

Sample size

Of 66 current clients of the rehabilitation services of the Inner West Area Mental Health Services, 63 were offered participation, with 42 people consenting. The reasons for dropouts and exclusion are summarized in Figure 1.

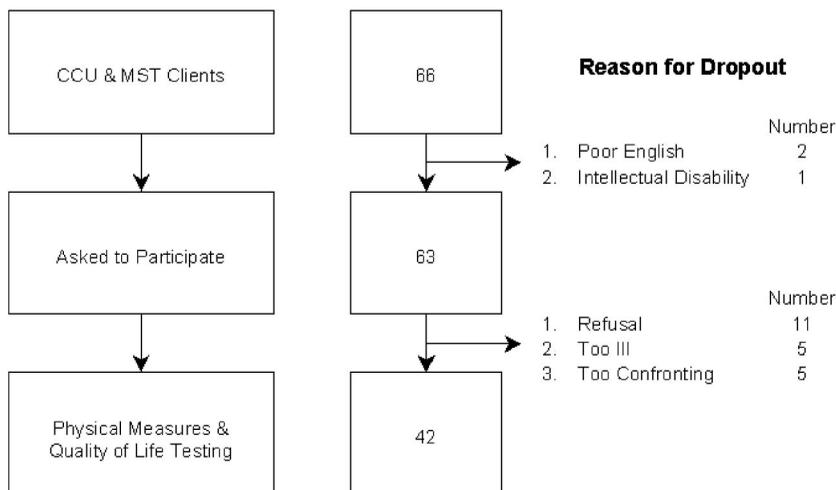


Figure 1. Participation at each stage.

Patient demographic characteristics and lifestyle characteristics

There were 32 males and 10 females, with the age range of 20–55 (mean 40) years. Diagnostically, 33 subjects had schizophrenia, four schizoaffective disorder, two obsessive compulsive disorder and two bipolar affective disorder. Medical co-morbidities included diabetes (3 cases), hypertension (5), angina (2), hypercholesterolaemia (8) and ischemic heart disease (2). Thirty two subjects (76%) smoked cigarettes, with the daily mean number smoked being 28. Only 13 subjects (31%) consumed alcohol regularly, with the mean daily number of standard drinks of those who drank being 1.8. Each person on average bought takeaway meals 2.6 times a week with 14% having takeaway 4–6 times a week. Only two subjects were doing any form of vigorous exercise at least once a week at the time of the survey. However, 28 subjects walked regularly, with 16 walking daily.

Physical measures

The distribution of BMI into classifications of underweight, normal weight and the three subgroups of obesity is summarized in Table I. The total proportion of those who were overweight (BMI > 25) was 88% (37/42) which was significantly greater ($p < .001$) than the proportion of Australians in the general population (60%) in this BMI range (Proietta & Baur, 2004). The proportion of overweight males (88%, 28/32) was significantly greater ($p = .014$) than the proportion in the Australian general population (68%); for females, the proportion was 90% (9/10) for our sample compared with 52% for the general population ($p = .03$).

Females were more likely to be obese, with a higher proportion in every obesity class. The mean BMI for females was 31.9 (obese – level 1) with the highest BMI being 40.0. The mean BMI for the males was 30.0 (obese – level 1) with the highest BMI being 45.4.

Thirty four participants (80%) had a waist circumference greater than 94 cm (for males) or greater than 80 cm (for females), indicating an increased risk of cardiovascular disease and metabolic complications. For a waist circumference indicating markedly increased risk (males > 102 cm and females > 88 cm), the proportion of males (14/32, 44%) was significantly less ($p = .05$) than for females (8/10, 80%).

Body image

The measured BMI was linked to one of the nine figural stimuli using gender-specific norms (Bulik et al., 2001) (see Figure 2). Differences between the actual, perceived and preferred figures were assessed using a repeated measures ANOVA ($F = 32$, $df = (2, 123)$, $p < .001$).

Table I. Levels of obesity.

Description	BMI	All subjects ($n = 42$)	Males ($n = 32$)	Females ($n = 10$)
Underweight	< 18.5	(0%)	(0%)	(0%)
Normal Range	18.5–24.9	5 (12%)	4 (13%)	1 (10%)
Overweight	25.0–29.9	18 (43%)	16 (50%)	2 (20%)
Obese – Class 1	30.0–34.9	12 (29%)	8 (25%)	4 (40%)
Obese – Class 2	35.0–39.9	5 (12%)	3 (9%)	2 (20%)
Obese – Class 3 (severe Obesity)	> 40.0	2 (5%)	1 (3%)	2 (10%)
Overweight and Obese	> 25	37 (88%)	21 (88%)	9 (90%)

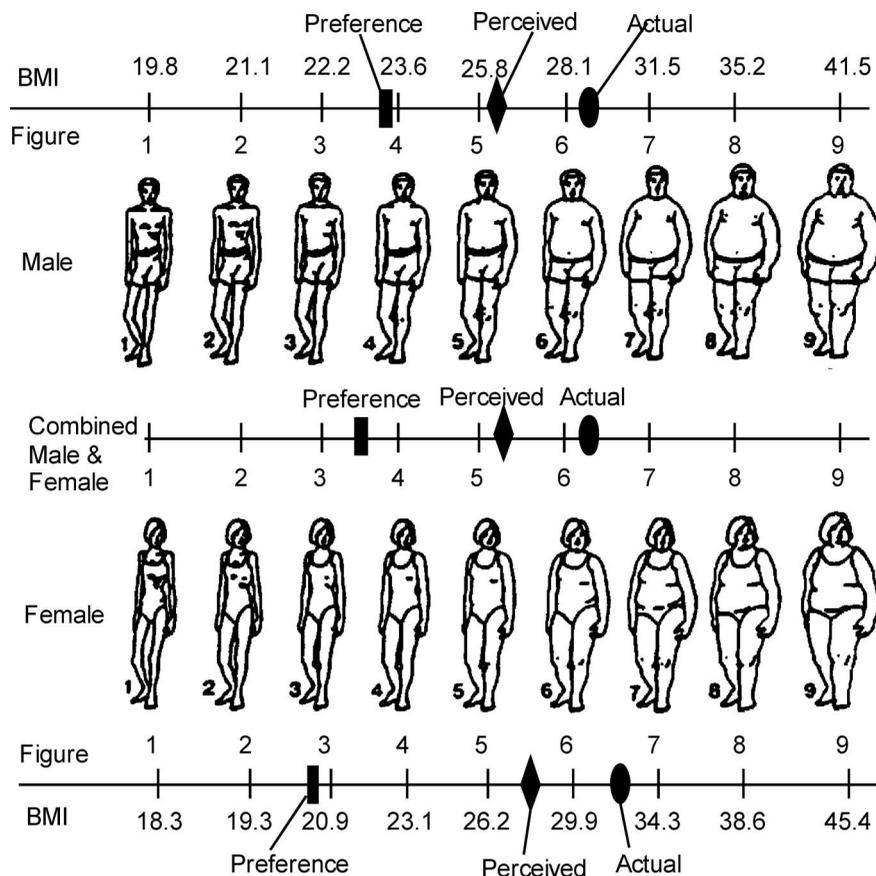


Figure 2. Figural Stimuli and BMI.

Individual *t*-tests revealed a significant difference between the perceived, preferred, and actual figures, with the two-tailed *p*-values all $< .01$ except for the difference between actual and perceived body size in females.

Twenty five subjects (60%) believed their psychotic medication had contributed to their weight. The frequency of reported weight gain due to each medication is shown in Figure 3. Of the 25 subjects, 20 (80%) were taking olanzapine and/or clozapine, and 17 (68%) attributed their weight gain to these medications. The small number of subjects on quetiapine, fluphenazine decanoate and haloperidol all believed it had caused their weight gain. There was no significant relationship between BMI and type of medications.

Methods to lose weight and medication adherence

For the 25 subjects who believed psychotropics to be a cause of their weight gain, the most commonly used methods (at any time) to lose weight were excessive exercise (15 subjects; 60%) and restricting food intake (15 subjects, 60%). Other methods included smoking cigarettes (8 subjects, 32%), laxative or slimming pills (3 subjects, 12%), and drinking coffee (2 subjects, 8%).

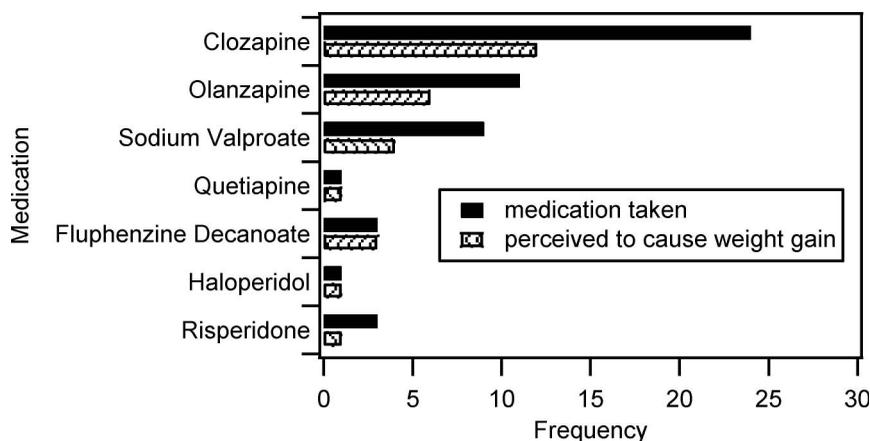


Figure 3. Medications perceived to cause weight gain.

With respect to adherence to medication, 64% (16/25) thought about stopping medication because of weight gain, with 16% (4/25) stopping on at least one occasion and 12% (3/25) stopping altogether. Only nine of the 25 subjects (36%) who believed their medication caused their weight gain were completely adherent. For the whole sample of 42 subjects, 62% (26/42) considered stopping their medication or were non-adherent in some form.

Quality of life

The results for the IWQOL-lite scale for the 42 subjects are shown in Table II. The most impacted aspect was self-esteem, with females having an average score of 44.3 out of 100. Females were affected more than males in all areas.

The results from the IWQOL-lite scale were compared with those reported for a separate community volunteer sample of people without psychosis, who had similar mean BMI (male BMI 29.6 and female BMI 32.4) and mean age (40) to our sample (Kolotkin et al., 2002). The total and subscale scores were compared using one sample *t*-tests (see Table II), bearing in mind that our data is negatively skewed and truncated at a maximum score of 100, so that the normality assumption for the *t*-test is not strictly satisfied. However, the *p*-values are small, supporting the conclusion that compared with overweight people not suffering from psychosis, a lower quality of life is associated with increasing weight in people with psychosis.

The IWQOL-lite total score for our subjects showed a negative correlation ($r = -.25$) with BMI. A regression analysis was performed on IWQOL-lite total score versus BMI (see Figure 4). When all subjects were considered, the 95% confidence interval for the coefficient of BMI was mostly negative but contained zero. The regression result was strongly influenced by subject 25, who had a BMI of 45.4 and an IWQOL-lite total score of 100 indicating no reduction in quality of life due to weight. When subject 25 was removed, the resulting regression coefficient of BMI had a negative confidence interval (see Figure 4) indicating that reduced quality of life was statistically significantly associated with high BMI.

For those subjects who thought that weight gain was caused by their medication, there was an association ($p = .05$) between thinking about stopping their medication and reduced quality of life.

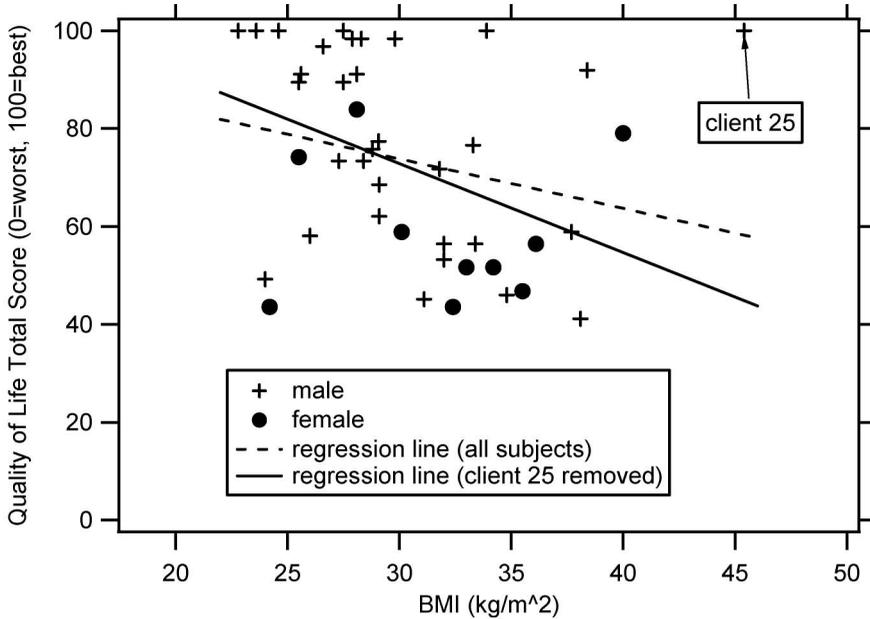
Table II. Comparison of community and subjects with psychosis.

IWQOL-lite scale	Patients with psychosis		"Normal" community comparison mean	<i>p</i> -value for <i>t</i> -test (two tailed)
	Mean	95% CI		
<i>Physical Function</i>				
Men	78	69–86	90.7	.002
Women	62	51–72	80.4	.003
All subjects	74	67–81	86.0	<.001
<i>Self esteem</i>				
Men	74	65–84	92.7	<.001
Women	44	29–60	76.5	<.001
All subjects	67	58–76	85.3	<.001
<i>Sex life</i>				
Men	82	73–91	97.4	<.001
Women	73	59–88	89.8	.03
All subjects	80	73–88	94.0	<.001
<i>Public distress</i>				
Men	80	69–90	97.3	<.001
Women	58	40–75	93.0	.002
All subjects	74	66–83	95.3	<.001
<i>Work function</i>				
Men	77	67–86	95.1	<.001
Women	64	52–76	91.6	<.001
All subjects	74	66–81	93.5	<.001
<i>Total score</i>				
Men	78	70–85	93.6	<.001
Women	59	48–70	84.1	<.001
All subjects	73	66–80	89.3	<.001

Discussion

There has never been a greater focus of the problems of obesity in the western world than the present, with this modern-day epidemic forecast to increase even further over the next 10–20 years (Crawford, 2002). The study reported here shows that the prevalence as well as the adverse physical, metabolic and psychological sequelae of excess weight in people suffering from psychotic disorders, are particularly common problems.

The novel component of this study is the systematic determination of attitudes and perceptions of antipsychotic-induced weight gain, indicating that people with psychosis believe that their medication causes their weight gain and it that it impacts significantly on their physical and mental well being (Allison et al., 2003; Green, Canuso, Brenner, & Wojcik, 2003; Strassnig, Brar, & Ganguli, 2003). We did, however, ask directly about medication-related weight gain, which might have resulted in reporting bias. Also, it is clear that people with psychotic disorders in general have an impaired quality of life, but this questionnaire asked specifically about weight-related impact on quality of life. Obesity-related quality of life with the IWQOL-lite scale showed that as BMI increased, quality of life decreased. People with psychosis were also significantly more affected by their weight than a general community population in every aspect. Females in particular were negatively impacted in the areas of self-esteem and public distress; this was underlined by their greater



Regression results

Coefficient	Estimate	95%CI
Coefficient of BMI (all subjects)	-1.0	-2.3 to 0.3
Coefficient of BMI (client 25 removed)	-1.8	-3.2 to -0.5

Figure 4. Relationship between QOL and BMI.

distortion in body image perception and greater disparity between perceived and desired body shape. As a result of their weight gain from psychotropics, traditional methods such as dieting and exercise were used to try to loose weight, as well as less conventional methods including smoking and drinking coffee, and use of laxative pills.

This study also addressed adherence issues relating to weight gain (Bulik et al., 2001). The fact that 83% of our sample was treated with olanzapine or clozapine, and that almost half believed these to be the cause their weight gain, has important implications in patients groups in whom such medications have a high rate of use. This is of particular concern in the area of medication adherence; indeed, 62% of our sample admitted to reduced adherence as a result of their weight gain.

There is no doubt this is a neglected topic in this high-risk population (Allison et al., 2003). This study has indicated the value of exploring patients' attitudes to weight gain, and evaluating the impact it has on their life. It highlights the importance of education and implementation of healthy lifestyles to improve quality of life for people with psychosis, and enhance adherence to medication. Diet and exercise programmes and regular metabolic and physical monitoring should be mandated for people taking antipsychotic medication, especially those at high risk of inducing obesity.

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