Patient perception of their weight, attempts to lose weight and their diabetes status

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INTRODUCTION
Patients' self perception of weight status is a factor to be considered before an attempt is made by the clinician to initiate weight loss behaviour.

METHOD
We compared the weight self assessment of 1973 general practice patients to their body mass index (BMI). Patients also ranked the success of any weight loss methods they had tried. General practitioners recorded the patients' type 2 diabetes status and this was analysed by BMI group.

RESULTS
Overweight/obese patients accounted for 56.6% of the sample. Forty percent of overweight and 12.5% of obese patients did not see themselves as overweight. Close to 40% of patients had attempted to lose weight in the previous year. Diet/exercise was the most common and successful weight loss method. There was a significantly higher prevalence of type 2 diabetes among obese patients.

DISCUSSION
Despite some positive results on weight loss attempts, a considerable proportion of overweight and some obese patients do not perceive themselves as being overweight.

During the latter part of the 20th century, the rising prevalence of overweight and obesity was recognised as a major risk to population health. The World Health Organisation's MONICA project, monitoring the health of populations from 21 countries during the 1980s and 1990s, found the greatest increase in body mass index (BMI) occurred in Australia and the United States of America.[1] Large scale projects such as the National Health and Nutrition Examination Survey (NHANES), which has been conducted periodically in the USA since the 1970s,[2] and the 1995 National Nutrition Survey in Australia[3] provided population data for researchers to explore.

Some notable studies used these data to examine the relationship between actual BMI and patients' self assessment of their weight. Briefly, they found that about 30% of people misclassify their weight by clinical standards. Perception of overweight is affected by a combination of factors including demographics: overweight or obese individuals who are male, older or from lower socioeconomic groups are less likely to perceive themselves as being overweight.[4,5,6] Social and cultural norms are also strong influences.[7]

Concern with increasing weight in the population led to investigations of weight loss methods. Two Australian studies found that over 20% of the population were trying to lose weight.[8,9] The same percentage of USA adults were attempting weight loss, mainly by restricting calorie and fat intake and exercising more.[10] In the United Kingdom, the preferred weight loss methods of obese patients at a dietetic clinic were influenced by gender (men were more likely to use physical activity) and number of attempts to lose weight, with patients who had tried to lose weight 10 or more times favouring dieticians, magazines and Weight Watchers.[11] A recent study of weight loss strategies in the USA found reducing the amount of food eaten to be the most popular (and most effective) method, together with increasing exercise and eliminating sweets and junk food. Decreasing fat intake and increasing fruit and vegetable intake were less effective.[12]

Obesity, particularly at high levels, has been associated with increased risk of excess deaths (especially in

younger age groups) compared with normal and overweight categories.[13] Health risks associated with obesity include cardiovascular disease, hypertension and some cancers.[2,14,15] Another associated disease is type 2 diabetes,[16,17] and individuals with a BMI of >35 are 20 times more likely to develop diabetes than those with a BMI between 18.5 and 24.9.[18]

Our study provides recent information from Australian general practice which may help practitioners address the problem of overweight and obesity among their patients.

Method

The BEACH program (Bettering the Evaluation and Care of Health) gathers data from a rolling, random sample of about 1000 GPs per year throughout Australia. Each GP records details of 100 consecutive patient encounters, such as age and gender of patient, problems managed, medications and other treatments. The methods and results from the BEACH study are published elsewhere.[19] In addition to gathering consultation based information, the BEACH method includes substudies which investigate other aspects of patient health. This paper uses data from a substudy conducted in May and June 2004.

General practitioners asked patients their height and weight, whether they considered themselves to be overweight, whether they had attempted to lose weight in the previous 12 months, and whether they had used any weight loss methods in the previous 3 years (*Table 1*). General practitioners also record patients' type 2 diabetes status and we examined the prevalence of the disease among patients from different BMI groups. Body mass index was calculated as the ratio of weight in kilograms to height in centimetres squared, with underweight defined as BMI <20, normal BMI ≥20 and <25, overweight as BMI ≥25 and <30, and obesity as BMI ≥30.

Denominators for the individual topics varied depending on the number of respondents to each question.

Table 1. Weight loss methods

In the past 3 years which weight loss methods have you tried?

- Weight loss programs
- Meal plans
- Over-the-counter products (pharmacy/retail)
- Diet and/or exercise program
- GP advice
- Prescribed medication
- Specialist/dietician advice
- Other

Statistical analysis

This investigation reports number of observations (n), percent of patients, 95% confidence interval (CI). The CI is calculated as the rate estimate ± (1.96 x standard error). The standard error calculations incorporate the study design (single stage cluster sample) according to Kish's formula.[20]

Ethics approval

Ethics committees of the University of Sydney and the Australian Institute of Health and Welfare approved the BEACH survey and this substudy.

Results

Eighty-two GPs provided adequate height and weight information to allow calculation of BMI for 1973 adult patients aged 18 years and over, of whom 58% were female. Within this group, 7.2% (95% CI: 5.8–8.5) were classed as underweight, 36.3% (95% CI: 33.5–39.1) were within a normal weight range, 33.4% (95% CI: 30.8–35.9) were overweight, and 23.2% (95% CI: 20.5–25.9) were obese.

Perception of weight

Overall, 46.0% (95% CI: 42.9–49.2) of patients sampled perceived themselves as being overweight. There was a statistically significant increase across BMI groups in the proportion of respondents who considered themselves overweight. In the underweight group, 3.6% of the respondents considered themselves overweight, while in the normal weight group, 15.5% considered themselves overweight. In the overweight group, 59.6% of patients saw themselves as overweight and in the obese group, 87.5% saw themselves as overweight (*Table 2*).

Table 2. BMI of general practice patients and perception of overweight in 2004

Objective status (n=1973)	Perceived overweight (%)	95% LCL*	95% UCL*
Underweight (n=139)	3.6	0.0	7.2
Normal weight (n=711)	15.5	12.1	18.9
Overweight (n=656)	59.6	54.1	65.1
Obese (n=455)	87.5	84.1	90.8

* Lower confidence level and upper confidence level

Weight loss attempts

Of 1895 respondents to this question, approximately 37.0% had made at least one attempt to lose weight during the previous 12 months. The percentage of patients who had attempted to lose weight increased significantly between the normal, overweight and obese groups (*Table 3*).

All 1973 patients answered the question on weight loss methods used in the previous

Table 3. Attempted weight loss by BMI group

Objective status (n=1895)	Attempted weight loss in past 12 months (%)	95% LCL*	95% UCL*
Underweight (n=122)	9.8	3.9	15.8
Normal weight (n=636)	20.4	15.8	25.0
Overweight (n=627)	43.2	38.4	48.1
Obese (n=450)	61.1	55.2	67.0

* Lower confidence level and upper confidence level

Table 4. Weight loss methods tried by BMI group

Weight loss method	Underweight (%) 95% CI (n=141)	Normal (%) 95% CI (n=716)	Overweight (%) 95% CI (n=658)	Obese (%) 95% CI (n=458)
Diet and/or exercise	11.4 (5.8–16.9)	20.0 (15.2–24.7)	40.0 (34.6–45.3)	56.6 (51.0–62.1)
GP advice	1.4 (0.0–3.4)	2.4 (0.4–4.3)	11.7 (7.4–16.0)	26.2 (20.6–31.8)
Weight loss program	0.0 (0.0–0.0)	3.5 (2.0–5.0)	8.8 (6.0–11.7)	17.5 (13.5–21.4)
Meal plan	0.0 (0.0–0.0)	2.1 (1.0–3.2)	6.1 (3.7–8.5)	13.3 (9.3–17.4)
Over-the-counter products	2.1 (0.0–4.5)	1.0 (0.3–1.7)	3.2 (1.3–5.1)	6.6 (3.7–9.4)
Prescribed medication	0.0 (0.0–0.0)	0.7 (0.1–1.3)	2.9 (1.4–4.5)	7.9 (4.9–10.8)
Specialist/dietician	0.0 (0.0–0.0)	0.8 (0.2–1.5)	2.1 (0.9–3.3)	5.9 (3.5–8.3)
Other	1.4 (0.0–3.4)	2.1 (1.0–3.2)	2.1 (0.5–3.8)	2.4 (0.6–4.2)

3 years. Diet and/or exercise was the most frequently used method, being used by 11.4% of respondents in the underweight category and 56.6% of those classed as obese. General practitioner advice was the second most frequently used method after diet and/or exercise for the overweight and obese groups (*Table 4*).

In the opinion of almost half of 794 respondents, diet and/or exercise was the most successful weight loss method. In the overweight group, 50.2% found diet and/or exercise to be the most successful weight loss method, but 27.5% had no success with any method. Among obese patients, 40.6% found diet and/or exercise to be successful, but 34.7% had no success with any method (*Table 5*).

Table 5. Distribution of most successful method overweight and obese patient groups

Successful weight loss method	Overweight (%) (n=295)	Obese (%) (n=288)
Diet and/or exercise	50.2	40.6
Weight loss program	9.5	7.6
GP advice	4.1	3.5
Meal plan	3.4	3.5
Prescribed medication	2.4	4.2
Specialist/dietician	1.7	2.4
Other	1.0	2.8
Over-the-counter products	0.3	0.7
No successful method	27.5	34.7

Prevalence of type 2 diabetes

The prevalence of type 2 diabetes was estimated to be 8.3% (95% CI: 6.7–10.0) in the responding 2192 patients aged 18 years or over. There was an upward trend across BMI groups, with a significantly higher prevalence among obese patients than among underweight or normal patients. There were 4.6% (95% CI: 1.3–8.0) of patients in the underweight group who reported having type 2 diabetes, and the same percentage in the normal weight group (4.6%, 95% CI: 2.6–6.7). In the overweight group, prevalence of type 2 diabetes was 8.7% (95% CI: 6.6–10.9), while in the obese group, prevalence was 14.2% (95% CI: 10.6–17.8).

Discussion

Recent research shows that overweight and obesity is increasing.[14,21] In the wake of the past decade of media focus on the problem, this study gives an up-to-date picture of how body weight is perceived and the extent to which adult general practice patients are attempting to lose weight. Forty-six percent considered themselves overweight and 37% had tried to lose weight in the previous 12 months. Recognition of their overweight and obesity increased with BMI category (60% of those who were overweight and 88% of obese patients). The prevalence of weight loss attempts also increased with BMI category (43% of overweight and 61% of obese patients). These results contrast with population surveys from the mid 1990s when only 20–25% of individuals were attempting weight loss.[8,9,10] However, a recent survey of American women found just under half were trying to lose weight[7] and that prevalence of type 2 diabetes increased through BMI groups, with significantly higher rates among the obese group.

Our findings on strategies for losing weight corresponded with other research, with diet and/or exercise named as the most commonly attempted weight loss method.[9,10] We took the further step of examining the success of weight loss methods, with patients naming diet and/or exercise as the most successful. However, responses to this question also showed that 28% of overweight and 35% of obese patients had found the weight loss methods they had attempted in the previous 3 years to be unsuccessful.

This study is limited to a sample of patients seen by GPs. Frequent attenders are more likely to be sampled than low attenders, so the results cannot be generalised to the population at large. It also relies on self reported height and weight, but the patients were in face-to-face contact with the GP, which would increase accuracy compared with telephone interviews or postal questionnaires. The accuracy of the responses concerning type 2 diabetes would also benefit from the GP's input. Field et al[18]

tested the validity of self reported diabetes and found 98% accuracy. 'Successful weight loss' was reported simply as the opinion of the patient. The scope of this study did not allow for definition or categorisation of the degree of success. The time lag between weight loss attempt (during the past year) and BMI reporting may have impacted on the proportion of underweight and normal patients attempting weight loss: they may not have been in those groups when trying to lose weight.

General practitioners, in conjunction with a dietician, have been found to produce significant weight improvement.[22] Primary care physician referrals to weight loss groups, exercise recommendations, and goal setting have also been found to be effective.[23] According to Potter et al,[23] physicians cited lack of time and fear of negative reactions among the reasons for not addressing the issue more often, although the majority of patients were willing to discuss weight with their doctor.[23] In a recent survey of Australian general practice patients, most said they would follow weight loss recommendations from the GP.[24]

This study has demonstrated that prevalence of overweight and obesity is high among general practice patients but that there is also increasing self recognition of the problem, resulting in higher rates of weight loss attempts, particularly among obese patients. These patients could benefit from their GP's involvement. The considerable proportion of overweight and the small percentage of obese patients who do not see themselves as overweight would need to change their self perception before any progress toward weight loss could be made.

Conflict of interest: none declared.

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