

4 Body mass

4.1 Background

Body mass is commonly assessed through the Body Mass Index (BMI). A person's BMI is assessed by dividing weight (kilograms) by height (metres) squared. A BMI that is less than 20 is considered underweight, 20–24 is normal, 25–29 is overweight and more than 30 is considered to be obese. Obesity or being overweight is considered a risk factor for coronary heart disease, stroke, heart failure and non-insulin dependent diabetes. There is also an association between obesity or being overweight and hypertension and cholesterol levels. It was estimated in 1995 that 43% of women (aged 25–64) and 66% of men (aged 25–64) were overweight or obese (BMI 25+) (Australian Institute of Health and Welfare 1996). Obesity or being overweight accounts for an estimated 4.3% of Disability Adjusted Life Years (DALYs) (Mathers et al. 1999). Being underweight is associated with poorer ratings of general health (Manderbacka et al. 1999) and higher levels of functional illness (Ferraro & Booth 1999).

National Health Priority Areas recognises obesity as an important modifiable cause of premature death and disability (Commonwealth Department of Health and Aged Care and Australian Institute of Health and Welfare 1999a). The national objective is to reduce the prevalence of overweight and obesity among adults. The population indicator for overweight will rely on:

- self-reported height and weight: ABS National Health Surveys;
 - ABS Population Survey Monitor; and
 - National Physical Activity Survey
- measured height and weight:
 - National Nutrition Survey;
 - NHF Risk Factor Prevalence Surveys;
 - Australian Health and Fitness Survey; and
 - Department of the Arts, Sport, the Environment, Tourism and Territories Physical Activity Survey.

Comparable data can also be obtained through the SAND program. While attention usually centres on issues surrounding being overweight, investigation of the morbidity profiles of normal and underweight people is also of interest.

4.2 Research questions

1. What are the levels of obesity in general practice patients?
2. Is obesity in general practice patients associated with particular patient profiles?
3. What are the levels of underweight in general practice patients?
4. Is being underweight in general practice patients associated with particular patient profiles?

4.3 SAND questions

Box 4.1: Body mass

GPs asked the patients (18+ years):

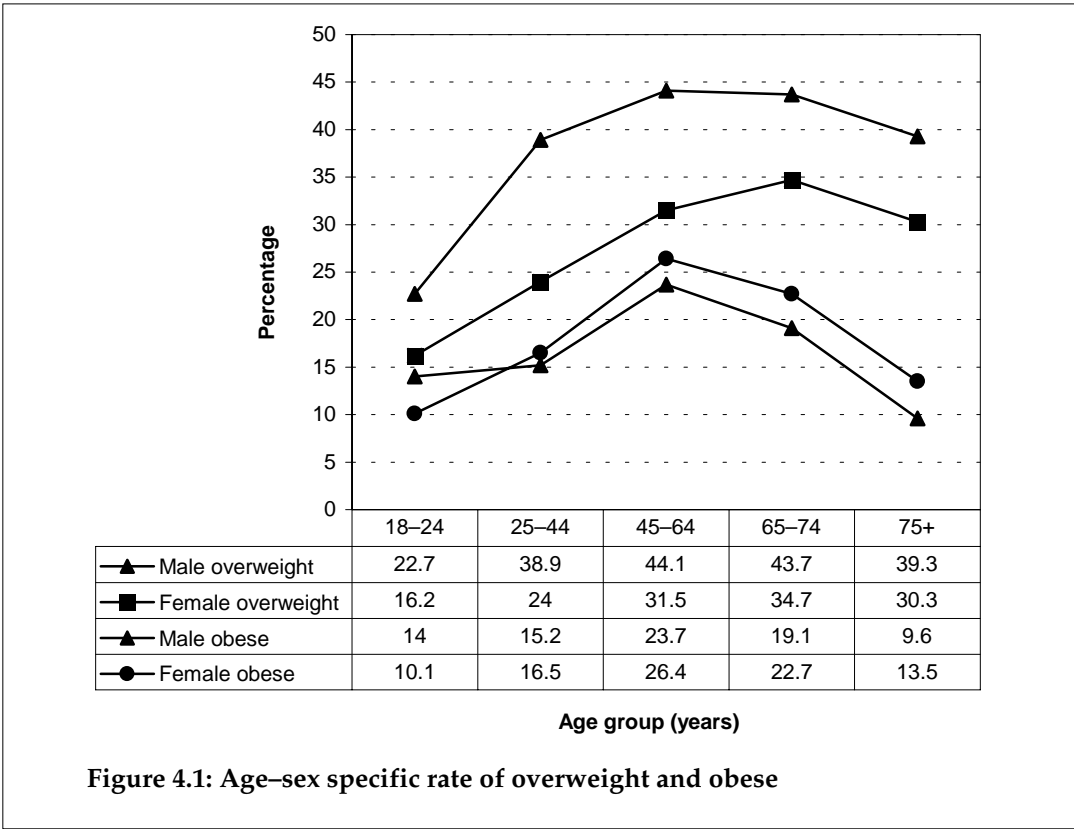
- ◆ What is your height in centimetres?
- ◆ What is your weight in kilograms?

Note: Metric conversion tables (feet and inches; stones and pounds) were provided to the GP.

4.4 Results

Sample size (18+ years) was 30,485 patient encounters from 978 GPs.

Overall, 18.4% (95% CI: 17.7–18.9) of patient encounters were with adults considered obese, 32.8% (95% CI: 32.1–33.4) were with adults considered overweight and 8.6% (95% CI: 8.2–9.0) with people considered underweight. A higher proportion of males were overweight or obese (57.2%) than females (47.0%). While the proportion of patients considered overweight or obese increased with age, the trend reversed at 75 years and over in both genders (Figure 4.1). It was also found that of women aged 18–24 years, 22.1% were considered to be underweight compared with only 9.0% of males in this age group (Figure 4.2).



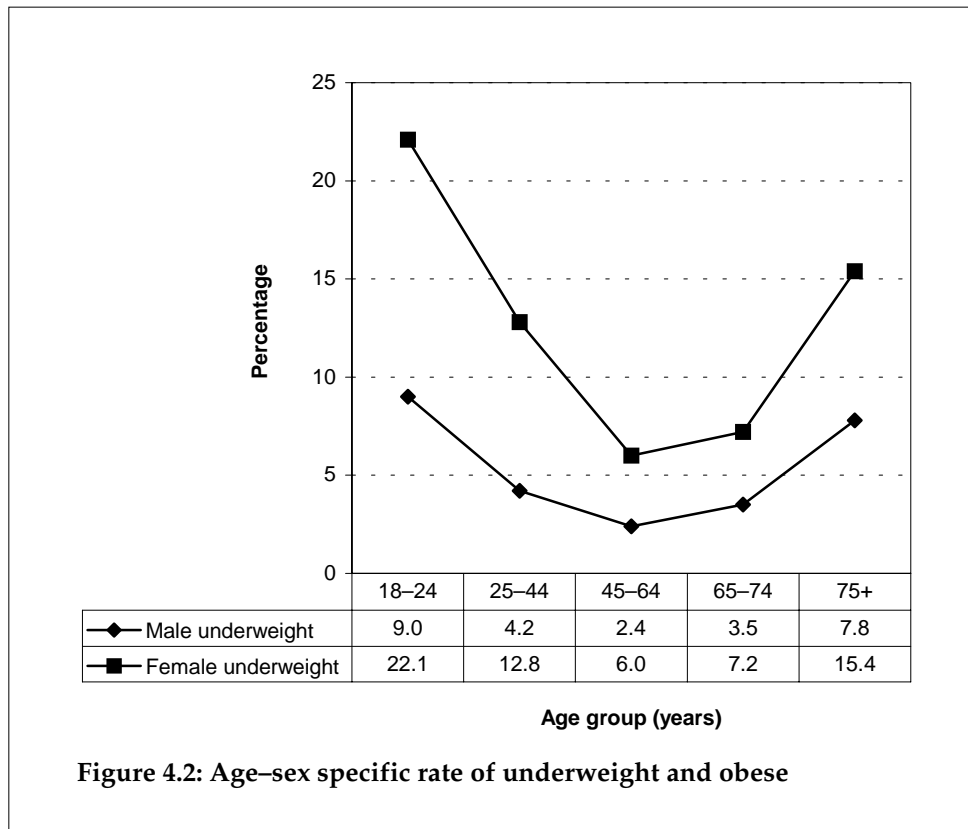


Figure 4.2: Age–sex specific rate of underweight and obese

Investigations into the association of body mass and problems managed (at ICPC-2 chapter level) revealed an apparent increased rate of management of digestive and psychological problems at encounters where the patient was considered underweight (Table 4.1). Closer examination of the psychological problems (at ICPC-2 rubric level) showed an increase in the likelihood of depression and drug abuse being managed at encounters with patients considered underweight (Table 4.2).

Overweight and obese patients were more likely to have circulatory and endocrine and metabolic problems managed. A closer examination of these types of conditions (at ICPC-2 rubric level) showed a higher rate of management of uncomplicated hypertension, non-insulin dependent diabetes mellitus (NIDDM) and lipid disorders.

4.5 Discussion

General practitioners view the areas of weight management and prevention of obesity and overweight as important domains of their work (Campbell et al. 1998). The current data suggest that patients attending general practice are more likely to be overweight or obese than the general community. This provides an opportunity for GPs to improve the health of the population. The preliminary findings of the current study also suggest an association between body mass index and morbidity managed by the GP, supporting previous research on the ill effects of overweight and obesity. Further analyses which take account of the confounding influence of age and gender need to be conducted to confirm this finding, and will be the subject of a later paper.

Table 4.1: Patient body mass by problems managed (ICPC-2 chapter)

Problems managed	Underweight (n=2,624)		Normal (n=12,305)		Overweight (n=9,992)		Obese (n=5,593)	
	n	Per 100 encs	n	Per 100 encs	n	Per 100 encs	n	Per 100 encs
General & unspecified	336	12.8	1,528	12.4	1,257	12.6	643	11.5
Blood	66	2.5	276	2.2	158	1.6	83	1.5
Digestive	320	12.2	1,332	10.8	1,008	10.1	594	10.6
Eye	72	2.7	347	2.8	289	2.9	134	2.4
Ear	67	2.6	400	3.3	353	3.5	217	3.9
Circulatory	348	13.3	2,016	16.4	2,264	22.7	1,478	26.4
Musculoskeletal	394	15.0	2,284	18.6	2,081	20.8	1,182	21.1
Neurological	138	5.3	530	4.3	444	4.4	287	5.1
Psychological	439	16.7	1,607	13.1	1,183	11.8	645	11.5
Respiratory	600	22.9	2,541	20.7	2,079	20.8	1,178	21.1
Skin	412	15.7	2,048	16.6	1,716	17.2	890	15.9
Endocrine & metabolic	151	5.8	887	7.2	1,101	11.0	1,003	17.9
Urological	111	4.2	396	3.2	302	3.0	165	3.0
Pregnancy & family planning	204	7.8	715	5.8	354	3.5	225	4.0
Female genital system	293	11.2	1,159	9.4	627	6.3	368	6.6
Male genital system	21	0.8	173	1.4	199	2.0	71	1.3
Social	25	1.0	123	1.0	90	0.9	51	0.9

Note: Abbreviations: encs = encounters

Table 4.2: Patient body mass by problems managed (selected circulatory, psychological and endocrine and nutritional problems)

Problem managed	Underweight		Normal		Overweight		Obese	
	n	Per 100 encs	n	Per 100 encs	n	Per 100 encs	n	Per 100 encs
Uncomplicated hypertension	130	5.0	941	7.6	1,198	12.0	877	15.7
Depressive disorder	132	5.0	479	3.9	404	4.0	244	4.4
Drug abuse	39	1.5	100	0.8	35	0.4	12	0.2
NIDDM	23	0.9	183	1.5	303	3.0	325	5.8
Lipid disorder	31	1.2	279	2.3	375	3.8	215	3.8

Note: Abbreviations: encs = encounters