OBESITY IN PRIMARY CARE PATIENTS IN KELANTAN, MALAYSIA: PREVALENCE, AND PATIENTS' KNOWLEDGE AND ATTITUDES

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Abstract. This study measured the body mass index (BMI), and assessed attitudes and knowledge about obesity, of 197 male and 217 female patients aged 20-59 years attending the primary care clinic of the university hospital in Kelantan, Malaysia.

There was no significant difference between the mean BMI of males (23.7) and females (24.2). In the overweight group (BMI 25-29.9) were 60 men (30%) and 66 women (30%). In the obese group (BMI 30 and above) were 12 men (6%) and 22 women (10%). Both diabetes mellitus and hypertension were associated with significantly higher BMI's.

Knowledge about obesity was lacking. Sixty-three (15%) failed to recognize that obesity is bad for health. When asked the causes of obesity, 88 (21%) failed to mention either diet or lack of exercise. "Being happy" was suggested as a cause by 32 (8%). When asked if certain foods would cause obesity if eaten in excess, 45 (11%) said "No" for fatty foods, and 164 (40%) said "No" for sweet foods. Concerning appearance, 30 (15%) men regarded an obese man as normal or even handsome, while 49 (23%) women regarded an obese woman as normal or beautiful.

Obesity is common among our adult patients, and is associated with some of their common health problems. However, a substantial minority do not regard obesity as unhealthy, do not relate it to diet or lack of exercise, do not recognize important groups of fattening foods, and do not regard obesity as unattractive.

INTRODUCTION

The health hazards of obesity are now well-known (Pi-Sunyer, 1993). Obesity increases the risk of developing hypertension, stroke, hyperlipidemia, diabetes mellitus, osteoarthritis, and certain cancers, *eg* endometrial cancer in women. Obesity increases the risk of coronary heart disease, not only through its effect on hypertension, lipids, and diabetes, but also as an independent risk factor. As cardiovascular diseases are now the leading cause of death in Peninsular Malaysia (SEAMIC, 1995), obesity is a major public health issue. Since obesity is potentially preventable, it should also be a leading concern for doctors in primary care and family medicine (Little and Margetts, 1996). However, few studies have been done on the prevalence of obesity in Malaysia (Ismail *et al*, 1995; Wan Mohamad *et al*, 1996).

The body mass index (BMI) has proved a useful measure of obesity. It is calculated by dividing the weight in kilograms by the square of the height in meters. In one common classification a BMI of 20-24.9 is regarded as acceptable, 25-29.9 as overweight, and 30 and above as obese (Truswell, 1985a). However, recent studies have suggested that certain weight-related health hazards occur at BMI's below 25. In longitudinal, prospective studies of over 100,000 American women followed for eight years, the risk of developing diabetes increased from a BMI of 23 and upwards (Colditz *et al*, 1990), and the risk of developing coronary heart disease increased from a BMI of 21 and upwards (Manson *et al*, 1990).

We know little about patients' knowledge and attitudes concerning obesity in Malaysia. In western societies there is an intense preoccupation with body image, and "slim is beautiful" (Rodin, 1993). The present study was performed to assess the prevalence of obesity among adults attending a primary care clinic, and to examine their knowledge and attitudes with respect to obesity.

MATERIALS AND METHODS

The subjects were patients attending the open-access primary care clinic (Klinik Perubatan Masy-

arakat, KPM) at the teaching hospital of Universiti Sains Malaysia (HUSM) at Kubang Kerian, Kelantan, in a largely rural area on the north-east coast of Peninsular Malaysia. Of 447 consecutive patients identified from their cards at reception as being 20-59 years old, 414 (93%) participated. Among the 33 excluded, 2 were visibly pregnant, 5 refused to participate, 4 were unable to answer due to mental or sensory handicap, and 22 could not be found in the waiting area.

As some patients were illiterate, the questionnaire was administered orally by trained research assistants. The presence of diabetes and hypertension was assessed in the questionnaire by asking patients if they took treatment for these conditions. Patients were asked several questions to assess their knowledge about obesity, and also asked if they thought an obese person of their own sex was attractive or unattractive.

Weight was measured on beam and lever scales to the nearest 0.1 kg, and height was measured against a wall scale to the nearest 1 cm. Data analysis, including comparison of means, was done using Epi Info, Version 5.01.

RESULTS

The 414 patients included 197 men and 217 women. There was no significant difference between the ages of the men (mean 38.0 years) and the women (mean 36.9 years).

The distribution of BMI is shown in Fig 1. There was no significant difference between the mean BMI of males (23.7) and females (24.2). In the overweight group (BMI 25-29.9) were 60 men (30%) and 66 women (30%). In the obese group (BMI 30 and above) were 12 men (6%) and 22 women (10%).

Tables 1 and 2 show the association between BMI and diabetes and hypertension among the patients. In both males and females, these conditions were associated with significantly higher mean BMI.

Table 3 shows the patients' responses to the question, "In your opinion, what is the effect of obesity on health?" While 351 (85%) answered "dangerous", or "very dangerous", the other 63 (15%) either did not know, or thought there was no

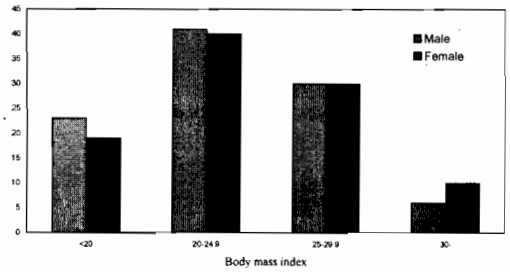

Fig 1–Distribution of body mass index among 414 outpatients aged 20-59 years.

Table 1

Mean BMI of patients with and without diabetes mellitus (on treatment).

	With DM	Without DM	p-value
Male	27.0	23.3	0.0008
Female	26.4	24.0	0.035

Table 2

Mean BMI of patients with and without hypertension (on treatment).

	With HPT	Without HPT	p-value
Male	27.4	23.0	0.00003
Female	27.5	23.3	0.00001

Table 3

Responses of 414 patients to the question, "In your opinion what is the effect of obesity on health?"

Response	No. of patients	%
Very dangerous	11	3
Dangerous	340	82
No effect	9	2
Good	34	8
Don't know	20	5

effect, or even answered "good". Thus 15% of our subjects did not recognise that obesity is harmful to health.

We received a variety of responses to the open-ended question, "In your opinion what is the cause of obesity?" with some subjects giving more than one cause. The responses were grouped into twenty-seven categories altogether; the frequencies of the eight most common are shown in Table 4. We also reviewed the responses to assess what proportion of subjects mentioned something related to diet and/or exercise. Although 326 patients included some aspect of diet and/or exercise in their answer, 88 (21%) did not. These included those who responded "don't know" as well as those who gave a response such as "being happy".

The subjects were asked whether certain suggested types of food would cause obesity if eaten in excess. For "fats, oils and fried food", 369 (89%) said "Yes", leaving 45 (11%) who failed to identify these as fattening foods. For "sweet food and sugar", only 250 (60%) said "Yes", with 164 (40%) failing to recognize these as fattening.

Tables 5 and 6 show the patients' responses to questions about the attractiveness of a fat person of their own sex. Among men, 30 (15%) thought a fat man was normal or even handsome, while 49 women (23%) thought a fat woman was normal or beautiful. Thus a substantial minority do not regard obesity as detracting from appearance.

Table 4

Responses of 414 patients to the open-ended question, "In your opinion what is the cause of obesity?"

Cause	No. of patients	%
Eat too much	199	48
Lack of exercise	83	20
Eat too much fatty food	67	16
Don't know	47	11
Heredity	36	9
Being happy, no problems	32	8
Too much sleep or rest	30	7
Eat irregular times/at night	23	6

Table 5

Responses of 197 male patients to the question, "In your opinion a fat man is?"

Response	No. of patients	%
Very handsome	0	0
Handsome	6	3
Normal	24	12
Unattractive	166	84
Very unattractive	1	1

Table 6

Responses of 217 female patients to the question, "In your opinion a fat woman is?"

Response	No. of patients	%
Very beautiful	0	0
Beautiful	4	2
Normal	45	21
Unattractive	166	76
Very unattractive	2	1

DISCUSSION

Among adult patients attending a primary care clinic in Kelantan, Malaysia we have found a high prevalence of overweight and obese subjects. These findings are not generalisable to the community, but in fact a recent community survey of 2,284 adults in Kelantan found 21.3% overweight, and 4.5% obese (Wan Mohamad *et al*, 1996), which is not much less than our rates. Our patient group may be biased towards the more overweight because of associated health problems which bring them to the clinic.

If it is true that all patients with a BMI of 25 or more would be more healthy if they reduced weight, the task of advising them is very large. If the threshold of BMI which constitutes a health risk is brought down to 23 or even lower, as suggested by recent studies (Colditz *et al*, 1990; Manson *et al*, 1990), the task is correspondingly larger. This has major implications for public health policy in relation to diet, and also to the day-to-day preventive work of family doctors and primary health care teams.

The relation between obesity and diabetes and hypertension has been shown in longitudinal studies in different populations (Pi-Sunyer, 1993). Our study is simply cross-sectional and can only show that the association is also present among our patients.

We report several new findings about knowledge and attitudes concerning obesity among rural Malaysians. Substantial minorities do not regard obesity as unhealthy, and do not relate it to either diet or lack of exercise. The responses to the question about the cause of obesity, such as "being happy", could be studied further, possibly by qualitative methods such as focus groups (Kitzinger, 1995).

The lack of understanding about fattening foods is important. Advice about a healthy diet normally encourages people to reduce their intake both of fats and sugars, because of the high energy density of these foods (Truswell, 1985b). However, the recognition of sugars as fattening by our subjects was particularly low, with 40% not regarding these as fattening. This may be related to the notoriously sweet tooth of the Kelantanese, who use large quantities of sugar not only in drinks and cakes, but even in meat dishes. This could be an important teaching point to emphasize in dietary advice in this area.

Finally we showed that substantial minorities of both men and women do not regard a fat person as unattractive. This may be relevant to people's tolerance of obesity, and could be studied further, possibly by qualitative methods. As Malaysians progress from lifestyles of subsistence to lifestyles of affluence the desirable body image may be changing. Until recently obesity may have been, and possibly in some people's minds still is an admired symbol of prosperity and ease.

In conclusion, there is an urgent need for education in Malaysia about the dangers of obesity, how it is caused, and how it can be avoided.

ACKNOWLEDGEMENTS

The authors would like to thank the Electives Committee of the School of Medical Science, Universiti Sains Malaysia, for allowing Cordelia Cole, Jennifer Esquiro and Mark Edwards to participate in this study. The authors would also like to thank Dr Nicholas Jackson, of the Department of Medicine, Hospital Universiti Sains Malaysia, for his helpful comments on the manuscript.

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