

The Validation of BMI as an Obesity Criterion in Chinese Adults

M.Z.He^{1,2}, A. W. C. Kung² E. T. S. Li¹,

¹Depart. of Zoology, The University of Hong Kong (HKU) and ²Depart. of Medicine, HKU, Queen Mary Hospital

Obesity is a metabolic disorder characterized by an increase in body fat. An increase in body fatness is a significant health risk. The prevalence of obesity in Hong Kong is unknown. Obesity is generally defined as having a body mass index (BMI, weight/height²) greater than 25 or a body fat content greater than 25% in male or 32% in female. However, these cut-off figures were established from Caucasian population. As the body shape and body size of Chinese are different from that of Caucasian, the cut-off value of BMI for the definition of obesity may not be applicable to the Chinese population. Little information is available on the body composition and body fat content of Chinese. In order to validate BMI as a obesity criterion in Chinese adult, a cross-sectional study was conducted in 256 healthy Chinese aged 20 to 78 in Hong Kong. Body weight and body height were taken. Body fat content was estimated by dual-energy X-ray absorptiometry (DEXA, Hologic QDR-2000). DEXA was chosen as a reference method because this technique is independent of body stature, age, sex and ethnicity. The female subjects (n=157) had a mean BMI of 22.8 and body fat of 35.9%. BMI was positively correlated with body fatness (R=0.79, P<0.0001). The Caucasian-based cut-off, 32% of body fatness, corresponded to a BMI of 21.2 in Chinese females. The male subjects (n= 99) had a mean BMI of 23.0 and body fat of 22.9%. Similarly, BMI was positively correlated with body fatness (R=0.75, P<0.001). 25% of body fat, the Caucasian cut-off, corresponded to a BMI of 23.7. A gender difference of BMI-body fatness relationship was observed. These results demonstrated a difference in the body composition in Chinese and also suggested that the Caucasian-based BMI cut-off of 25 may be too high for Chinese adults, especially for females. Further research is necessary to re-examine the obesity criteria for Chinese population.

PSYCHOLOGICAL, SOCIAL AND HEALTH ISSUES IN HONG KONG WOMEN WITH OSTEOPOROTIC FRACTURES

AYY Ho¹, AWC Kung¹, Shirley SC Leung¹, MF Leung², M Lo³. *Department of Medicine, Queen Mary Hospital¹ and United Christian Hospital², Hong Kong Society for the Aged³, Hong Kong.*

Osteoporosis is a systemic bone disease characterized by low bone mass and increased susceptibility to fracture, mainly affecting the postmenopausal women and the elderly. Osteoporosis has become a major cause of morbidity and mortality among the elderly as the population ages. In order to study the impact of osteoporotic fractures on the psychological, social and health issues in the elderly women, we conducted a cross-sectional questionnaire survey in 1225 Chinese women. All the participants were above 60 years old and were ambulant with a mean age of 70.6 ± 6.3 years. The mean age at the time of first fracture was 60.6 ± 9.8 years. 171 women reported a previous history of atraumatic fracture with 3 women having more than 1 fractures. Those without fractures served as controls (n=1054). There were 87 Colles', 25 spine, 15 hip and 47 fractures at other sites. Both the fracture group and the controls had similar age, personal characteristics and social background. The fracture group had a significant lower scoring in activity of daily living (13.5 ± 2.7 vs 14.0 ± 1.8, p=0.002). 11.7% and 11.2% in the fracture group had used physiotherapy and occupational therapy services respectively in the preceding 12 months, whereas these figures were only 7.0% (p=0.01) and 1.2% (p=0.02) respectively in the controls. Furthermore, the mean number of hospitalization for all causes in the preceding year was significantly higher in the fracture group when compared to the controls [0.22 (range 0 – 4) vs 0.13 (range 0 – 4), p=0.01]. The Philadelphia Morale Score, which measured life satisfaction, was significantly lower in women with osteoporotic fractures than that of the control group (9.12 ± 2.51 vs 9.58 ± 2.71, p=0.03). The results demonstrated that women with osteoporotic fractures had a greater need for hospitalization and other health services. They showed lesser satisfaction in life and they required more help in their daily activities. These findings enable a better understanding of the needs of elderly with osteoporotic fractures.