

## The costs of overweight



The Article by Seamus Kent and colleagues<sup>1</sup> presents an analysis of the overall inpatient costs in women in England aged 50–64 years with different body-mass index (BMI) values on admission in 2006 who were taking part in the Million Women Study.<sup>2</sup> Clearly the lowest hospital costs and the lowest rate of hospital admission were in women with BMIs between 20 kg/m<sup>2</sup> and 22.5 kg/m<sup>2</sup>, which is consistent with the WHO analysis that the optimum BMI is about 21 kg/m<sup>2</sup>.<sup>3</sup> The risk of diabetes and other chronic diseases increases progressively from a BMI of about 20–21 kg/m<sup>2</sup> in non-smokers. This contrasts with a BMI of 25 kg/m<sup>2</sup> for specifying thresholds on the basis of a clear increase in mortality rather than morbidity. What are still needed though are detailed analyses of costing attributable to increased BMI at all ages and both sexes. Reliable extrapolation from these analyses alone would be impossible.

Only 18% of the women in this cohort were obese; however, after these self-reported weights were corrected, the real prevalence of obesity was revealed to be 23%, which is consistent with Zaninotto and colleagues' analyses.<sup>4</sup> With these adjusted figures, the optimum BMI range of 20–22.5 kg/m<sup>2</sup> was the same whether using the original or adjusted BMI figures, with a progressive increase in admissions not only for diabetes and other chronic conditions but also for the weight-related musculoskeletal problems including arthritis, particularly of the knees. The effect of diabetes was underestimated because only the presenting diagnosis (usually a general practitioner responsibility) was taken into account in the assessment of the underlying cause even though cardiovascular complications are a common reason for hospital admission in people with diabetes, and, during the 5 years of the study, the number of patients with designated diabetes at presentation trebled.

Traditionally doctors have focused on severely obese patients, but these new analyses emphasise the importance of considering the whole range of excessive BMIs. Kent and colleagues' research shows that of all the hospital costs incurred by the overweight patients, only 13% could be attributed to their weight condition. However, the total additional costs to the UK National Health Service (NHS) from having women with a BMI

of 25–29.9 kg/m<sup>2</sup> were 30% of the total extra costs from all the women with a BMI of 25 kg/m<sup>2</sup> or more. This cost compares similarly with a value of 44.3% in the USA,<sup>5</sup> despite the USA having a higher proportion of obese people than England. This difference might be due to a greater willingness of surgeons in the fee paying USA than in England to operate when overweight women have musculoskeletal disorders, including arthritis.

When assessing the real effect of diabetes in England for the Chief Scientist's Foresight analysis of future prospects for obesity,<sup>6</sup> we found that diabetes proved to be the substantial component of costs. Furthermore, the costs were best prevented, not simply by undertaking an intervention to halve the numbers of obese patients, but by measures that dropped the mean BMI of the whole adult population. The other intriguing result was that for all the emphasis on childhood obesity, it will not have a material effect on hospital costs for the next 40 years because it takes time for all the major complications of being overweight or obese to become sufficiently severe to warrant hospital interventions.

The present analyses also refer only to middle-aged women, but women aged 70 years and older account for a substantial part of health service costs and the number of these women is expected to increase. As such, Kent and colleagues' research represents a low estimate of the total costs of increased BMI. Furthermore, these analyses do not account for outpatient visits, general prescription costs, or primary health-care services; obesity accounted for 0.7–2.8% of all health costs when assessed 10 years ago.<sup>7</sup> If these costs are included, then it is no wonder that Simon Stevens (chief executive of NHS England) considers obesity to be the biggest future threat to the NHS in England.<sup>8</sup> Furthermore, if we estimate the proportion of the disease burden attributable to all the different risk factors, then having a BMI of more than 23 (taken as the optimum BMI upper limit) is estimated to be only the 11th biggest burden on society globally.<sup>9</sup> The disease burden of overweight or obesity is the 5th biggest concern for policy makers in high-income countries and 3rd in the Middle East and North Africa.<sup>10</sup>

Many health economists are now focusing on the broad societal costs of being overweight, including early retirement, efficiency at work, and prospects of

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See **Articles** page e214

promotion. These societal costs are now estimated to account for 60% of the total costs of being overweight or obese.<sup>11</sup> In 2014, the McKinsey Institute estimated the economic burden of being overweight or obese at US\$2 trillion, matching that of smoking and all armed conflict.<sup>12</sup> So now really is the time that we start implementing coherent prevention policies, even if many doctors still underestimate the cost of obesity.

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We declare no competing interests.

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