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Hospital admission rates increase in line with BMI

A body mass index (BMI) above normal is linked with a higher rate of hospital admission in women, according to a study partly funded by the National Institute for Health Research (NIHR).

The study, summarised by an NIHR Signal, looked at over one million women aged 50-64 taking part in the NHS breast cancer screening programme.

Researchers found that each 2kg/m² rise in BMI above the normal-weight threshold in women aged 55-79 leads to a 5% rise in annual hospital admissions and 7% rise in healthcare costs.

Women were linked by their NHS number to the Office for National Statistics and Hospital Episode Statistics revealing incidence of hospital admissions and day-case procedures between 2006 and 2011. This was analysed against BMI category, taking into account their age, smoking status, alcohol use and various socioeconomic factors.

Five-year data on hospital admissions, diagnoses and costs were extrapolated to all women in this age group in England. Among findings, it shows that knee joint replacement surgery and diabetes rank high among obesity-related costs.

In England, £662m of the annual hospital admission costs in 2013 could be attributed to overweight or obesity in women of this age group.

NIHR Signals

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The 2016 Health Survey for England showed that 27% of women were obese (BMI >30kg/m²) while 30% were overweight (BMI 25-30kg/m²). Only 58% of women were achieving recommended physical activity levels.

Current guidance on this topic is encompassed in two guidelines. The National Institute for Health and Care Excellence guideline *Obesity Prevention* (NICE, 2015) emphasises the need to prioritise obesity prevention. Recommendations include local authorities providing cycling and walking routes, childcare facilities providing active play sessions, and schools and workplaces supporting healthy food choice and physical activity.

In addition, *Obesity: Identification, Assessment and Management* (NICE, 2014) provides recommendations on obesity management. Several lifestyle interventions incorporating dietary, physical activity and behavioural components are central to care taking account of medical comorbidities.

The main findings of this study are summarised in Box 1. **NT**

- To read the full Signal report go to: [Bit.ly/NIHRBMI](http://bit.ly/NIHRBMI)

Implications for practice

This study confirms that hospital admission rates and costs increase proportionally with BMI. The study only considers secondary care costs. Add the cost of primary and social care services, and work absence from obesity-related illness and the economic burden becomes greater.

Prevention of obesity is easier than cure. This is another reminder to focus public health efforts to support healthy lifestyle change. Disease-specific data may help healthcare commissioners identify where to prioritise resources.

This analysis highlights the impact of excess weight on women's health and emphasises the reality facing the NHS when it comes to the cost of treating its consequences in hospitals.

These findings help us make a case for investment in earlier and more preventative approaches, which benefit the population and offer, where appropriate, support for individuals.

This emphasises the need for public health approaches to promote healthy lifestyle behaviour and prevent obesity.

References

National Institute for Health and Care Excellence (2015) *Obesity Prevention*. Nice.org.uk/guidance/cg43

National Institute for Health and Care Excellence (2014) *Obesity: Identification, Assessment and Management*. Nice.org.uk/guidance/cg189

Box 1. What did the review find?

- There were 1.84 million hospital admissions during the five-year period
- Admission rates were lowest for women in the lower half of the normal weight spectrum (BMI 20-22.5kg/m²) at 321 per 1,000 women per year, at an annual cost of £567 per woman. They were highest for severely obese women (BMI >40kg/m²) at 530 per 1,000 women per year and an annual cost of £1,220 per woman
- Each 2kg/m² rise in BMI above 20kg/m² was associated with a 5.0% rise in admissions and 7.4% rise in annual cost
- There were 6.6 million women aged 55-79 years in England in 2013. Applying these results suggested that excess weight accounted for £662m (14.6%) of the total £4.5bn hospital costs for this population in that year. Over a third of these costs (£258m) related to musculoskeletal conditions - with most of those costs for joint replacement
- Further analysis suggested that diabetes may account for 39% of the total costs attributed to overweight and obesity.