



The human cost of failing to address obesity

Val Bullen and Victoria Feenie

The costs of obesity and its related comorbidities to healthcare systems are well known, yet the effects on obese people individually are equally devastating. Obesity is now seen in people of all ages, even children, and it has widespread effects on physical health, reproductive health, employment, mental health, stigma and mortality risk. These effects are described in this article, and the urgent need to begin tackling the condition in primary care is highlighted.

We are all aware of the increasing cost to the NHS of treating obesity and its consequences, with headlines such as “Get serious about obesity or bankrupt the NHS” (NHS England News, 2014). This is not only due to the comorbidities associated with obesity, such as diabetes, cardiovascular disease and cancer, but also due to the costs of changes to operating theatres, ambulances, beds, wheelchairs, etc., that are required to cope with morbidly obese individuals. However, failure of obese people themselves to effectively address the problem, for whatever reasons, affects not only their health and wellbeing but also their social and work life. It is important for those healthcare professionals working with obese children and adults to be aware of all aspects of the condition, and to be prepared to make use of every encounter to address this issue, as detailed in the recent NHS England Implementation Guide and Toolkit (Varley and Murfin, 2014).

Impact on mortality and quality of life

Globally, overweight and obesity comprise the fifth leading risk factor for mortality, resulting in some 2.8 million deaths annually (World Health Organization, 2009). Individuals with a BMI

over 35 kg/m² face an increase in mortality risk of 40% in women and 62% in men, as compared to individuals with a BMI in the normal range (Mehta and Chang, 2009). According to Dent and Swanston (2010), moderate obesity (BMI, 30–35 kg/m²) reduces life expectancy by an average of 3 years, while morbid obesity (BMI, 40–50 kg/m²) reduces it by 8–10 years, which is equivalent to the effects of lifelong smoking.

In addition to an overall increase in mortality, there are several studies linking a reduced quality of life (QoL) with obesity. In one, Jia and Lubetkin (2005) concluded that people with obesity had significantly lower health-related QoL (HRQoL) than people with a normal weight, and these lower scores were seen even in those who did not have chronic diseases known to be linked to obesity. This may be because obese individuals face a greater risk of mobility impairments, which will affect their QoL.

Obesity is a risk factor for functional decline in both genders, and the risk increases with body mass (Himes, 2000). Individuals with higher waist circumference and body mass demonstrate difficulty in bending, kneeling, stooping, lifting and carrying. Problems with executing these basic physical tasks creates limitations in maintaining

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Article points

1. In addition to the well-known effects of obesity on mortality risk, the condition has wide-ranging effects on physical activity, quality of life, employment and mental health.
2. Obesity also affects reproductive health, and obesity during pregnancy can transfer these health risks to the offspring.
3. Primary care can play a crucial role in identifying and treating obesity; however, many GPs are reluctant to discuss the condition and feel inadequately trained to manage it.

Key words

- Obesity impact
- Primary care

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1. Approximately one third of children aged 10 years in the UK are now overweight or obese.
2. Childhood obesity usually leads to obesity in adulthood, and it is associated with adverse cardiometabolic outcomes, injuries and depression, as well as reduced academic performance and a health-related quality of life similar to that of children with cancer.
3. Obesity also affects reproductive health, delaying puberty in boys and bringing it forward in girls, as well as causing menstrual and fertility problems.

strength and mobility, as well as in performing basic activities of daily living (Han et al, 1998). Furthermore, at the other end of life, we are seeing an impact of obesity on the QoL of children.

Effects in children

Figures from the latest National Child Measurement Programme for England show that over a fifth (22.5%) of children in Reception Year were either overweight or obese in 2013/2014, as were around a third (33.5%) in Year 6, with the prevalence of obesity higher in boys than in girls in both school years (Health and Social Care Information Centre, 2014). Recent figures from the Millennium Study showed significant variation in the different UK countries; 40% of 11-year-olds in Wales and Northern Ireland were overweight or obese, compared to 35% in England and 33% in Scotland (Centre for Longitudinal Studies, 2014). For 11–15 year olds, the prevalence of overweight and obesity is around 35% (Public Health England, 2014). This means that approximately 4.5 million children and young people in the UK are overweight or obese (Helping Overcome Obesity Problems, 2014).

Childhood and adolescent obesity confers an increased risk of adverse outcomes, including asthma, hypertension, cardiovascular problems, sleep apnoea, insulin resistance and other endocrine abnormalities, increased risk of fractures, and psychological effects such as low self-esteem and depression (Reilly et al, 2003). A recent study found that hospital admission rates for obesity and obesity-related health problems among children and young people have risen more than four-fold in the last decade, particularly among girls and teenagers (Jones Nielsen et al, 2013).

Obesity affects not only children's health but also their academic performance (Booth et al, 2014), which may be partly explained by health issues and absenteeism (Wijga et al, 2010), and it may lead to bullying (Rees et al, 2011). A study by Schwimmer et al (2003) demonstrated that obese children and adolescents had an HRQoL that was similar to those diagnosed with cancer.

A decade ago, one of the most striking and sobering statements made by child obesity experts was that, because of the rising levels of obesity in children, the current generation may have a

shorter life span than their parents for the first time in 200 years (Olshansky et al, 2005). This is because the majority of obese children become obese adults, with all the associated health issues that this brings (Singh et al, 2008). Yet progress in resolving the problem remains slow and has led GPs to call for a COBRA-style emergency taskforce to be set up in order to tackle the rising epidemic of childhood obesity. They warn that, unless urgent action is taken now, an entire generation will be “destroyed” by their diet (Royal College of GPs, 2014).

Reproductive health

Although obesity is becoming more acceptable and normalised, and with most parents failing to recognise their child as obese (Eli et al, 2014), there are consequences not only to the health of obese people but also to that of future generations, through transgenerational effects. However, obesity also has more direct effects on reproductive health. According to the Royal College of Obstetricians and Gynaecologists, the prevention of childhood obesity should be considered a priority given the impact of obesity on reproductive, obstetric and gynaecological health (Busby et al, 2012).

Obesity initially affects puberty, with girls entering menarche earlier (Kulie et al, 2011). Adipose tissues contain aromatase, an enzyme that can convert adrenal androgen precursors to oestrogen; thus, obesity may cause delay of puberty in boys, which in turn can cause psychological problems (Busby et al, 2012). Menstrual problems and polycystic ovary syndrome are more common in obese girls, affecting their fertility (Schulte et al, 2015), and obese pregnant teenagers are at greater risk of pre-eclampsia and eclampsia (Naver et al, 2014).

As obese children become obese adults and their fertility potential is adversely affected, although they are more likely to seek infertility services, they are less likely to receive help (Vahratian and Smith, 2009). Obesity decreases successful pregnancy rates in both natural and assisted conception cycles, and it increases the risk of miscarriage (Norman, 2010). Obese mothers are a risk both to themselves and to their children; maternal mortality rates are significantly higher in obese

women when compared to their normal-weight counterparts (Wilkinson, 2011), and obesity confers an increased risk of adverse pregnancy and fetal outcomes, including gestational diabetes, fetal macrosomia, caesarian delivery and pre-eclampsia (Stewart et al, 2009). Although many conceptions will result in healthy live-born babies, these offspring will have increased lifetime health risks (Drake et al, 2010), and there is increasing evidence of an association between maternal obesity during pregnancy and childhood obesity in the offspring (Reynolds et al, 2010).

Obesity and work life

The effects of obesity extend to work life as well, with obese people less likely to be in employment than people of a healthy weight (NICE, 2013). Although the average employee takes 7 days off sick each year (Sainsbury Centre for Mental Health, 2007), obese employees from London Underground were found to take significantly more short- and long-term sickness leave than workers of a healthy weight, taking an average of four extra sick days per year (Harvey et al, 2010). For an organisation employing 1000 people at the average wage and working hours, this could equate to more than £126 000 per year in lost productivity (NICE, 2012). Such figures are likely to be an underestimate because of self-certification.

Obesity can also result in workplace presenteeism. Unlike absenteeism, which is typically defined as health-related absence from work, presenteeism is defined as health-related limitations at work. Moderately or extremely obese workers (BMI, ≥ 35 kg/m²) experience the greatest degree of presenteeism, particularly in terms of the time needed to complete tasks and the ability to perform physical job demands. In fact, moderately or extremely obese workers have been shown to be significantly less productive than other workers; overall, moderately or extremely obese workers were found to have a 4.16% health-related loss in productivity, 1.18% greater than the combination of underweight, normal-weight, overweight and mildly obese workers (Gates et al, 2008).

The risk of suffering from a fall-related injury requiring medical treatment is 15–79% higher for overweight individuals than for normal-weight people. The greater the fat mass, the higher the

risk of injury. Thus, compared with normal-weight individuals, someone with a BMI classed as overweight has a 15% greater risk and someone with a BMI of >40 kg/m² has a 48% greater risk (Finkelstein et al, 2007). Falls and overexertion are the primary causes of sprains, strains and dislocations in people with obesity compared with non-obese people (Matter et al, 2007). It is, therefore, perhaps unsurprising that implementing a weight control programme in the workplace has been shown to reduce the frequency of several work-related injuries among obese individuals (Lemon et al, 2010).

Stigma

According to Puhl and Heuer (2009), in the US, obese individuals are highly stigmatised and face multiple forms of prejudice and discrimination because of their weight. Weight stigma is seen in the media, employment, healthcare and education, and seems to be growing in prevalence (Brewis, 2014). Obese individuals are considered to be lazy, unmotivated, lacking in self-discipline, less competent, non-compliant and sloppy (Puhl and Heuer, 2009). They are stigmatised and judged as though their condition is all their own fault, even though obesity is a complex, multifaceted condition. Weight stigma increases vulnerability to depression, low self-esteem, poor body image, maladaptive eating behaviours and exercise avoidance (Gatineau and Dent, 2011). Feeling stigmatised and discriminated against is very stressful and can lead to further weight gain and, in particular, an increase in visceral fat (Schvey et al, 2014). Thus, a vicious cycle is set up, compounding the problem.

Obesity and mental health

Psychological problems are a common feature of obesity. Individuals who suffer from psychological disorders (e.g. depression, anxiety and eating disorders) may have more difficulty controlling their consumption of food, exercising an adequate amount and maintaining a healthy weight. A recent review by Luppino et al (2010) found bidirectional associations between depression and obesity.

Up to 70% of obese individuals considering bariatric surgery suffer from a current and/or past

Page points

1. Obesity affects an individual's ability to work, with obese people reported to take around 50% more sick days per year and to have a small but significant health-related loss of productivity compared with normal-weight people.
2. Obese people also have a significantly increased risk of falls and injuries, which increases in line with BMI.
3. Obese people are stigmatised in many aspects of life, which increases their vulnerability to low self-esteem, depression, maladaptive eating behaviours and even further weight gain.

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1. Psychiatric disorders, particularly major depression, are common in obese people, with adolescent girls being especially at risk.
2. The role that primary care can play in treating obesity has recently been highlighted; however, many GPs feel that they have insufficient training and resources to tackle the issue.
3. Obesity education is the first step to equip primary care physicians with the knowledge and tools to manage this global issue.

psychiatric disorder, of which major depressive disorder (MDD) is the most prominent (Collins and Bentz, 2009). However, obesity and MDD are associated at all stages of life, including childhood, adolescence and adulthood. Adolescent girls are particularly at risk (Marmorstein et al, 2014). Obesity is strongly correlated to depression and other mood disorders, particularly in women, according to Gatineau and Dent (2011). Other psychological disorders, such as anxiety and even suicide, have been associated with changes in body weight (Mather et al, 2009). This will not only have an impact on most areas of an individual's life but will also make dealing with obesity itself more of a challenge.

Conclusion

The human cost of failing to treat obesity is vast and impacts all facets of an obese person's life. The increasing prevalence of obesity, together with a projected increase in diabetes and other associated comorbidities, will put an enormous strain on the already overburdened NHS in the coming years.

Owing to the nature of the obesity epidemic, and the extent of the population affected, Ard (2015) recently highlighted in the *BMJ* that primary care can play a crucial and important role in treating obesity. For many adults, primary care may be the only form of healthcare they receive, and it also provides the scale that is needed to disseminate treatments and interventions widely.

Primary care providers think they have few resources and a lack of sufficient training to provide an informed and effective obesity treatment plan for their patients (Wadden et al, 2013). Furthermore, Booth et al (2015) analysed the records of several thousand obese patients and found that 80% of them had never talked to their GP about their weight. It is, therefore, essential that primary care health professionals seek training in obesity care, online courses for which are now available, to make best use of every encounter. ■

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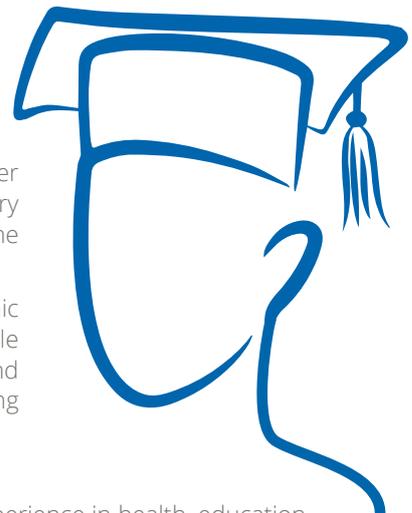
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“The increasing prevalence of obesity, together with a projected increase in diabetes and other associated comorbidities, will put an enormous strain on the already overburdened NHS in the coming years.”



“Our mission is to make the healthcare profession in the UK the most obesity literate in the world.”



The College of Contemporary Health is dedicated to training the large number of health professionals needed to attend to health problems related to 21st Century lifestyles. CCH’s primary focus is on obesity and preparing health professionals for the biggest challenges associated with obesity care and management.

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1. According to the WHO, overweight and obesity comprise the fifth leading risk factor for mortality, resulting in:
 - A. 3.6 million annual deaths
 - B. 2.8 million annual deaths
 - C. 1.5 million annual deaths
 - D. 0.5 million annual deaths
2. Morbid obesity (BMI 40–50 kg/m²) reduces life expectancy by:
 - A. 2–3 years
 - B. 5 years
 - C. 15 years
 - D. 8–10 years
3. According to figures from the latest National Child Measurement Programme for England, the proportion of children in Reception Year who are overweight or obese is:
 - A. 5.6%
 - B. 10.0%
 - C. 15.0%
 - D. 22.5%
4. According to the HOOP report, the approximate number of UK children who are overweight or obese is:
 - A. 4.5 million
 - B. 600 000
 - C. 1 million
 - D. 255 000
5. Childhood and adolescent obesity confers increased risk of the following:
 - A. Asthma
 - B. Hypertension and cardiovascular problems
 - C. Sleep apnoea
 - D. Insulin resistance
 - E. Psychological effects such as low self-esteem
 - F. All of the above
6. The average employee takes 7 days off sick each year; a worker with obesity on average will take:
 - A. An extra day
 - B. Less than the average employee
 - C. 4 extra days
 - D. 7 extra days
7. The cost in lost productivity due to obesity-associated absenteeism in a company employing 1000 people could equate to more than:
 - A. £126 000 per annum
 - B. £10 000 per annum
 - C. £3000 per annum
 - D. £58 000 per annum
8. According to Gatineau and Dent (2011), obesity and weight stigma increases vulnerability to:
 - A. Depression
 - B. Low self-esteem
 - C. Poor body image
 - D. Maladaptive eating
 - E. Exercise avoidance
 - F. All of the above
9. The number of obese individuals considering bariatric surgery suffering from a current and/or past psychiatric disorder is up to:
 - A. 5%
 - B. 15%
 - C. 23%
 - D. 70%
10. Analysis of the records of several thousand obese patients found that X% had never talked to their GP about their weight. The X% was:
 - A. 10%
 - B. 25%
 - C. 3%
 - D. 80%