

Overweight and obesity in mid-life: Evidence from the 1970 British Cohort Study at age 42



Introduction

Obesity is a major public health concern in Britain. People who are overweight or obese face a higher risk of many health problems, including cardiovascular disease, diabetes and certain cancers. The associated costs to the NHS are estimated at more than £5 billion a year, with this figure set to almost double by 2050¹.

It is possible to track the evolution of the obesity epidemic by looking at people in their early forties, who grew up at a time when lifestyles were becoming increasingly inactive and diets were transformed by high-calorie convenience foods.

The 1970 British Cohort Study (BCS70) follows the lives of more than 17,000 people born in England, Scotland and Wales during a single week in that year. The study has collected a vast amount of information

over the course of the cohort members' lives, which can be used to help us understand how past circumstances affect outcomes and achievements in later life. This briefing provides a first look at initial findings on body mass index (BMI)² and related issues from the BCS70 age 42 survey. It suggests areas where greater policy focus is needed, as well as areas for future research.

BCS70 age 42 survey

The BCS70 age 42 survey took place between May 2012 and April 2013. In total, 9,872 interviews were completed. The dataset will be deposited with the UK Data Service in January 2014, providing an invaluable resource for the social and medical sciences.

Key findings

¹ Department of Health report 2011: *Healthy Lives, Healthy People: A call to action on obesity in England* (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/213720/dh_130487.pdf).

² Body Mass Index (BMI) measures the ratio between height and mass. BMI is calculated by dividing mass in kilograms by squared height in metres (kg/m²). BMI is used to classify individuals as underweight (BMI < 18.5), normal weight (18.5 to 25), overweight (25 to 30) or obese (over 30). In the age 42 survey, height and weight were self-reported rather than measured. Past research has found that self-reported height and weight are reasonably accurate but there is a tendency for people to over-report height and under-report weight. As such, estimates of overweight and obesity based on self-reports will likely underestimate the problem to an extent (<http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=566220>).

- The generation born in 1970 is considerably more likely to be overweight or obese than those born 12 years earlier were at the same age.
- Men born in 1970 are far more likely to be overweight than women. Forty-five per cent of men were classified as overweight and a further 23 per cent as obese. The equivalent figures for women were 29 per cent and 20 per cent. Men are far less likely than women to recognise that they are overweight.
- Although men are more likely to be overweight, women are less likely to do 30 minutes of vigorous exercise at least once a week. Around a third (32 per cent) of women did not achieve this level of exercise, compared to around a quarter (24 per cent) of men.
- Obesity at age 42 is strongly linked to relatively poor physical and mental health. Two thirds (66 per cent) of those who were 'normal weight' reported that their health was 'excellent' or 'very good', compared to only 40 per cent of those who were obese.

Overweight and obesity

Those born in 1970 are markedly more likely to be overweight at age 42 than those born in 1958³ were at the same age. Almost half (49 per cent) of BCS70 women were classified as either overweight (29 per cent) or obese (20 per cent). This compares to 42 per cent of women in the 1958 National Child Development Study, born 12 years earlier, who were classified as either overweight (26 per cent) or obese (16 per cent) at the same age. Among BCS70 men, 68 per cent were defined as overweight (45 per cent) or obese (23 per cent), compared to 62 per cent (46 per cent overweight and a further 16 per cent obese) of men from the 1958 cohort at the same age. While men were far more likely to be overweight than women in each generation, the increase between the generations was consistent for both men and women.

How do obesity levels differ by country?

There were some differences in weight by country. Thirty-seven per cent of men and women in Wales were classified as overweight, and a further 26 per cent were obese. In Scotland, 38 per cent were classified as overweight and a further 24 per cent were obese, while in England 37 per cent were overweight and 21 per cent were obese.

There were also gender differences in obesity levels by country, with women in Wales and Scotland more likely to be obese than men (27 per cent of women compared to 26 per cent of men in Wales, and 25 per cent of women compared to 23 per cent of men in Scotland). However, in England 19 per cent of women were obese, compared to 23 per cent of men.

Do people know they are overweight?

BCS70 cohort members were also asked whether they thought they were about

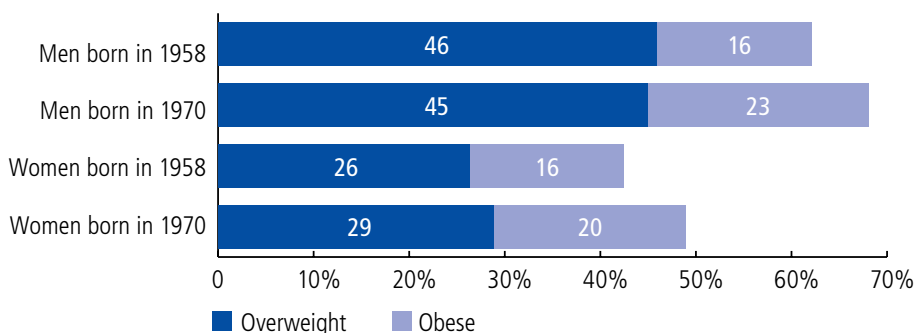
Self-perceived weight status by actual BMI status for men and women at age 42

| | | BMI | | | | |
|-----------------------|------------------------|------------------------|---------------|------------|-------|-------|
| | | Underweight | Normal weight | Overweight | Obese | |
| Self-perceived weight | Men | About the right weight | 12.0% | 73.0% | 30.4% | 4.4% |
| | | Underweight | 80.0% | 12.2% | 0.4% | 0.2% |
| | | Slightly overweight | 8.0% | 14.5% | 66.2% | 50.3% |
| | | Very overweight | – | 0.2% | 3.0% | 45.1% |
| | | | 100% | 100% | 100% | 100% |
| Women | About the right weight | 43.5% | 65.3% | 9.4% | 1.1% | |
| | Underweight | 54.1% | 3.2% | – | 0.1% | |
| | Slightly overweight | 2.4% | 31.1% | 75.6% | 24.8% | |
| | Very overweight | – | 0.4% | 15.0% | 74.0% | |
| | | 100% | 100% | 100% | 100% | |

the right weight, underweight, slightly overweight or very overweight. Among those who were overweight, men were much more likely than women to believe they were about the right weight (30 per cent of men compared to 9 per cent of women). Similarly, among those who were obese, twice as many men (50 per cent) as women (25 per cent) said that they were only slightly overweight. Men of normal weight were almost as likely to think they were underweight (12 per cent) as overweight (15 per cent), while women of normal weight were far more likely to class themselves as overweight (32 per cent) than underweight (3 per cent).

Overweight women born in 1970 were far more likely than overweight men to say that they were trying to lose weight (66 per cent of women compared to 41 per cent of men). Among the obese, 77 per cent of women and 62 per cent of men were making an effort to lose excess weight. Among those of normal weight, 29 per cent of women were attempting to lose weight compared to 11 per cent of men.

Overweight or obese at age 42 (1970 cohort compared with 1958 cohort)



Links to social class and health

Obesity is strongly associated with social class. The obesity level amongst those working in 'higher managerial or professional occupations'⁴ was much lower than for those in 'routine occupations' (19 per cent compared to 34 per cent for men and 12 per cent compared to 24 per cent for women).

BMI was linked with self-reported general health and mental health. Two thirds (66 per cent) of those who were normal weight reported that their health was 'excellent' or 'very good', compared to only 40 per cent of those who were obese. The obese were much more likely than those of normal weight to report type 2 diabetes (7 per cent compared to 1 per cent), high blood pressure (16 per cent compared to 4 per cent) and arthritis (9 per cent compared to 5 per cent). Over one in five (22 per cent) of people who were obese showed high levels of mental distress⁵, in contrast to 14 per cent of those who were normal weight.

³ Data from the 2000 survey of the 1958 National Child Development Study, when cohort members were age 42.

⁴ Social class is based on National Statistics Social Economic Classification (<http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/soc2010/soc2010-volume-3-ns-sec--rebased-on-soc2010--user-manual/index.html>). Study members have been classified on their status at the time of the age 38 survey in 2008 as social class at age 42 is not yet available.

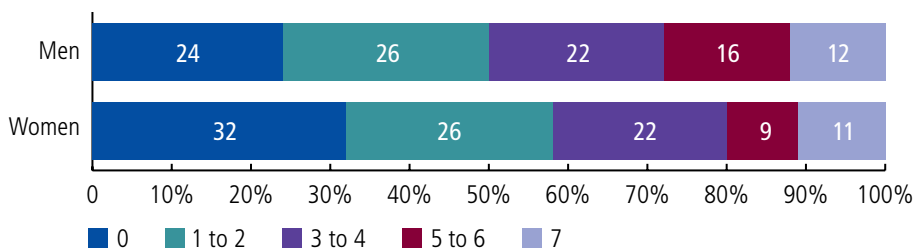
⁵ Mental distress was measured using the Malaise Inventory. Respondents answered nine yes-no items which cover emotional disturbance and associated physical symptoms. Individuals who answered yes to four or more items were classified as showing signs of mental distress (<http://www.esds.ac.uk/longitudinal/resources/malaise/background.asp>).

Exercise

In the age 42 survey, BCS70 cohort members were asked "On how many days in a typical week do you do 30 minutes or more of exercise where you are working hard enough to raise your heart rate and break into a sweat?" Nearly a third of women (32 per cent) responded that they do no such exercise in a typical week, compared to nearly a quarter (24 per cent) of men. Interestingly, recent research using the Millennium Cohort Study⁶ has indicated that a gender gap in exercise emerges by age 7, suggesting that the gap at age 42 may have its roots in childhood.

Exercise was linked to obesity, with 35 per cent of obese people saying they took no vigorous exercise during the course of a typical week, compared to 26 per cent of those who were normal weight. However, exercising frequently is less strongly related to weight. A quarter (25 per cent) of those who were normal weight exercised vigorously at least four times a week, compared to 21 per cent of those who were obese.

► Vigorous exercise at age 42 (number of days a week)



BCS70 cohort members were also asked how often they participated in different types of sport or exercise. Just over half (55 per cent) took part in at least one activity at least once a week. Fitness, gym and conditioning activities (such as aerobics, keep-fit classes or weight-training) were most common, with around 30 per cent of both men and women taking part in these activities once a week or more.

Men at age 42 were much more likely to cycle at least once a week than women (17 per cent compared to 7 per cent) and

also to play team sports (9 per cent of men in contrast to just 1 per cent of women). However, women were most likely to walk for pleasure on a weekly basis (34 per cent compared to 22 per cent) and to do yoga or pilates (8 per cent of women compared to 2 per cent of men). Running was the activity associated with lowest levels of obesity; among those who ran at least once a week just 9 per cent were classified as obese.

⁶ <http://www.bmjopen.bmj.com/content/3/8/e002893.full>

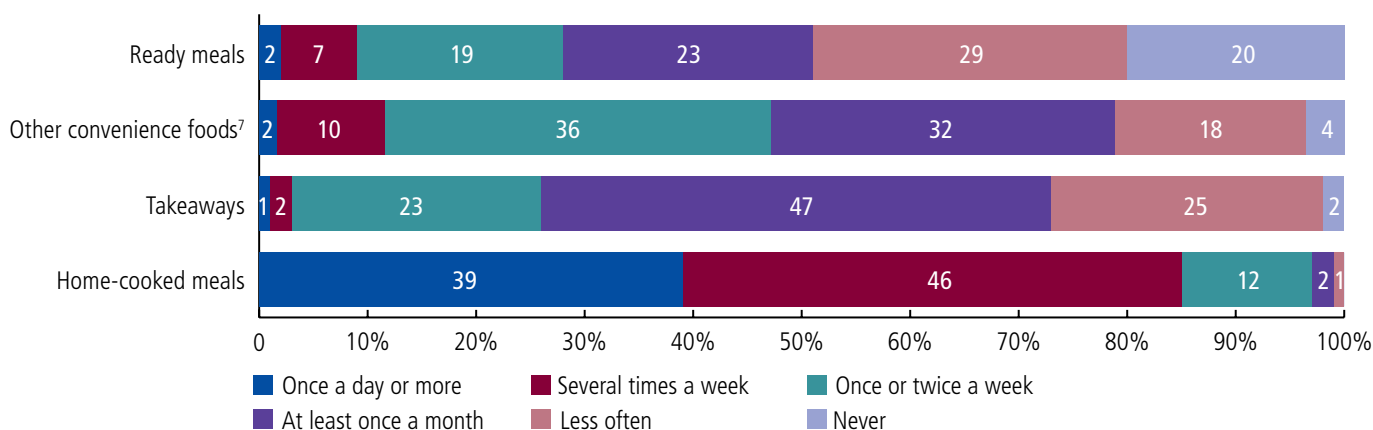
Diet

Busy lifestyles and the availability of convenience foods have led to changes in the way we eat. Eighty-five per cent of cohort members ate home-cooked meals at least several times a week and 39 per cent ate them every day. However, ready meals were also popular, with 28 per cent of cohort members eating them at least once or twice a week. Nearly half (47 per

cent) of the cohort said that they ate other convenience foods, such as packaged or frozen fish-fingers, burgers, oven chips or ready-made pizzas, at least once or twice a week. A quarter of cohort members (25 per cent) ate takeaways at least once or twice a week. Fifty-six per cent said that they always ate breakfast but 11 per cent skipped this meal every day.

Of all of these dietary behaviours, the most strongly related to being overweight was eating takeaways. Nearly a third (32 per cent) of cohort members who were obese ate takeaways at least once a week, compared to 21 per cent of those who were normal weight.

► Types of meals at age 42



⁷ Total does not equal 100% due to rounding.



Recommendations

The findings reported here reveal some significant health risks for the 1970 generation. They are considerably more likely than the 1958 generation to be both overweight and obese.

It is well known that being overweight or obese is linked to social class, which the findings here confirm. However, the extent to which obesity is a men's health issue in particular has not previously been widely reported. We suggest that alerting men to their BMI status and the health risks associated with this should be a priority.

Carrying excess weight is far more socially acceptable for men than for women. Men will not respond to health messages about weight and obesity if they do not recognise that they are overweight. Our findings indicate that overweight men are far less likely than overweight women to recognise that they are overweight, and are therefore less likely to be attempting to lose weight. This is a particular concern given that cardiovascular disease is the leading cause of death for men aged 35 and over, and overweight, poor diet, high cholesterol and lack of exercise are major risk factors.

Future research

The descriptive findings presented here have focused on a snap-shot of information collected in the age 42 survey. BCS70 has gathered a wealth of information spanning the entire lives of its cohort members and this briefing aims to alert researchers and policymakers to the potential of the study for advancing understanding of health and wellbeing in mid-life.

Questions that could be addressed by BCS70 data include: What are the implications of overweight, both in childhood and adulthood, for physical and mental wellbeing throughout life? What leads some people to gain weight over the years? For example, what are the roles of diet, exercise and physical and mental health? And what factors throughout the life course encourage people to maintain healthy and active lifestyles?

About the 1970 British Cohort Study

The 1970 British Cohort Study (BCS70) follows more than 17,000 people born in England, Scotland and Wales in a single week of 1970. Since the birth survey in that year, there have been eight further surveys of the cohort members at ages 5, 10, 16, 26, 30, 34, 38 and 42. The age 46 survey is due to take place in 2016.

For over 40 years, findings from BCS70 have had a significant impact on policy across a wide range of areas, including health, education, equality and poverty. The study will continue to provide a vital source of evidence for policymakers addressing social challenges for many years to come.

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► www.cls.ioe.ac.uk/BCS70



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