Public Health England

Obesity and disability

Adults

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We were established on 1 April 2013 to bring together public health specialists from more than 70 organisations into a single public health service.

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Obesity and disability – adults

Key points

- There is a two-way relationship between obesity and disability in adults
- Obesity is associated with the four most prevalent disabling conditions in the UK: arthritis, back pain, mental health disorders and learning disabilities
- One third of obese adults in England have a limiting long term illness or disability compared to a quarter of adults in the general population
- The prevalence of obesity-related disabilities among adults is increasing
- Adults with disabilities have higher rates of obesity than adults without disabilities
- For those adults who are disabled and obese, social and health inequalities relating to both conditions may be compounded. This can lead to socioeconomic disadvantage and discrimination
- The combination of rising obesity and disability has significant implications for health and social care services in England.

Introduction

There is a two-way relationship between obesity and disability among adults. Adults with disabilities appear to be at higher risk of obesity than those without disabilities, and obese adults may experience disabilities related to their weight.[1]

This paper examines the evidence linking obesity and disability among adults. It looks in detail at the most prevalent disabling conditions in the UK as reported by the Department for Work and Pensions[a]: arthritis, back pain, mental health disorders and learning disabilities. It also explores inequalities in relation to obesity and disability and highlights implications for health and social care.

[a] Only around half (6 million) of the 11.5 million people covered by the disability provision in the Equality Act are in receipt of disability-related benefits. http://www.improvinghealthandlives.org.uk/news/?nid=2230

Relationship between obesity and disability

Definition of disability

Over recent decades our understanding of disability has shifted from a medical or individual model to a social model. Using the medical model, the social exclusion faced by people with particular health conditions or impairments was seen as an inevitable consequence of ill health. For example, the Equality Act 2010, defines disability as: *'a physical or mental impairment and the impairment has a substantial and long-term adverse effect on their ability to perform normal day-to-day activities'*.

The social model recognises how disability is shaped by social structures and sociocultural practices and is increasingly considered a human rights issue.[2] According to the United Nations Convention on the Rights of Persons with Disabilities (CRPD) people with disabilities '*…have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others*.'[3]

Obesity-related disability

Obesity may lead to disability as a consequence of increased body weight, associated co-morbidities, environmental factors, or a combination of these.

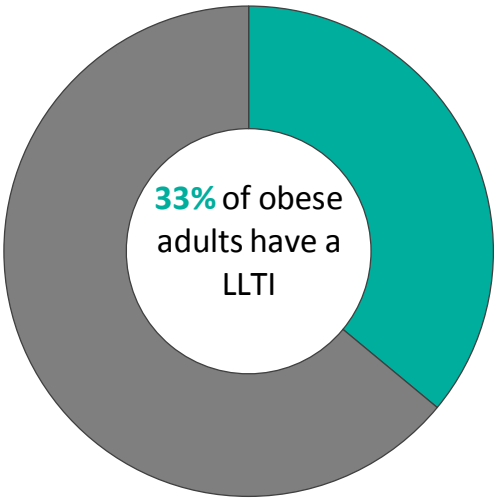
Obesity places mechanical stress on joints, increasing the risk of back pain and osteoarthritis which may in turn limit mobility.[4] Some obese people may face difficulties in performing tasks such as walking, climbing steps, driving or dressing.[5] This in turn can lead to physical inactivity, pain and discomfort, functional limitations and mental distress.[6] Older people who are obese are at particular risk of joint pain and arthritis and may be less motivated to engage in physical activity if they are concerned about falls and bone fractures.[7]

Among people with severe obesity, limitations in mobility-related activities have been reported to be between five and nine times greater than for healthy weight subjects.[5] A recent UK cohort study of adults with severe obesity found that the prevalence of self-reported disability was strongly associated with BMI, age, the presence of type 2 diabetes, metabolic syndrome and clinical depression.[6]

The Health Survey for England (HSE) provides data on limiting long-term illness or disability (LLTI)[b] as well as measured height and weight. Analysis of HSE data shows that one third of obese adults in England have a LLTI (Figure 1), whereas a quarter of adults in the general population have a LLTI.

[b] Refers to following questions:
Do you have any long-standing illness, disability or infirmity? By long-standing I mean anything that has troubled you over a period of time, or that is likely to affect you over a period of time? (Yes or No response)
Does this illness or disability/do any of these illnesses or disabilities limit your activities in any way? (Yes or No response)

Figure 1: Obese adults with a limiting long-term illness or disability (LLTI) in England



Source: Health Survey for England. Combined data from 2006–2010

Disability-related obesity

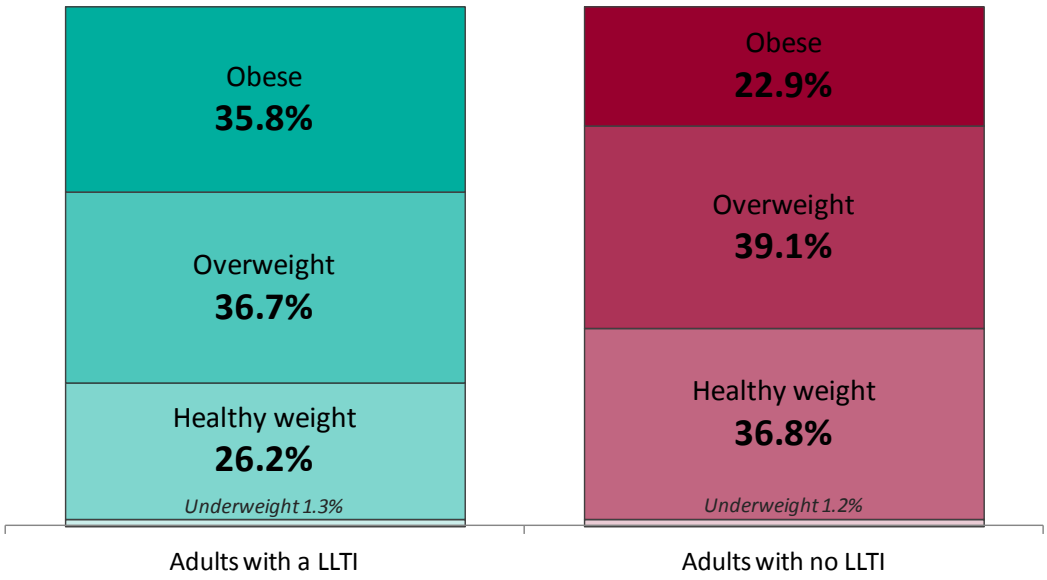
The association between obesity and disability varies by age and sex, and by level and type of disability. Physical inactivity and muscle atrophy, as well as secondary conditions[c] (such as depression, chronic pain, mobility problems and arthritis) have all been found to contribute to the development of obesity among people with physical disabilities.[8] For those with learning disabilities, obesity is linked to lower levels of physical activity, poor diet and the side-effects of medication.[9] Data from the United States indicates that adults with disabilities engage in physical activity on a regular basis approximately half as often as adults without disabilities (12% vs. 22%).[10]

A qualitative study in the UK found that obesity related problems are compounded by disability, with a greater perceived level of prejudice and increased care needs.[11] Among people with disabilities, higher BMI can present a greater risk of secondary conditions. People with disabilities may also face a range of barriers in relation to health screening and health promotion, primary and secondary health care as well as rehabilitation services.[2,12]

Data from the Health Survey for England (HSE) show that obesity rates among adults with a long-term limiting illness or disability (LLTI) are 57% higher than adults without a LLTI. Among adults with a LLTI, 35.8% are obese (Figure 2), compared to 22.9% of adults without a LLTI. These figures are very similar to those found in the United States.[13]

[c] Secondary conditions are defined as preventable medical, emotional, or social problems resulting directly or indirectly from an initial disabling condition.[8]

Figure 2: BMI category of adults (aged 18+) with and without a limiting long-term illness or disability (LLTI) in England



Source: Health Survey for England. Combined data from 2006–2010

Further analysis of adult disability and body mass index data in England is presented in the appendix. It includes analysis of HSE and general practice information systems data.

Disabling conditions and obesity

In the UK, the main disabling conditions in terms of Disability Living Allowance[d] (DLA) claimants are arthritis, mental health, learning difficulties, disease of the muscles, bones or joints, and back pain. Table 1 shows the most prevalent disabling conditions in the UK based on DLA claimants in 2010/11.

Table 1: Most prevalent disabling conditions in the UK as based on DLA claimants in 2010/11

Main disabling condition	Caseload (thousands)	Percentage of all claimants
Arthritis	563.7	17.4%
Mental health*	508.4	15.7%
Learning difficulties	398.7	12.3%
Disease of the muscles, bones or joints**	192.7	5.9%
Back pain	155.5	4.8%

Source: Department for Work and Pensions, Governance and Security, Work and Pensions Longitudinal Study. February 2012

* Includes psychosis, psychoneurosis, personality disorder, dementia and behavioural disorder
** This is a broad category which includes osteoarthritis and rheumatoid arthritis

There is a considerable body of research on the association between obesity and musculoskeletal conditions (including arthritis and back pain), mental health disorders, and learning disabilities.[1] The following section looks in more detail at the relationship between obesity and these conditions.

Musculoskeletal conditions

Musculoskeletal conditions are a common cause of severe long term pain and physical disability.[14] In the UK, musculoskeletal disorders account for over 30% of all years lived with disability (YLDs)[15] and 1 in 7 primary healthcare consultations.[16] Two of the most prevalent musculoskeletal disorders are osteoarthritis and back pain:

Osteoarthritis

Arthritis is the leading cause of disability in many older adults.[17] Common arthritic symptoms include joint pain, stiffness, inflammation and restricted movement. In the United States, the prevalence of obesity among adults with arthritis is on average 54% greater than among adults without arthritis.[e,18] Obese adults with arthritis are 44% more likely to be physically inactive compared to obese adults without arthritis.

[d] Disability Living Allowance (DLA) is payable to people who are disabled and who have personal care needs, mobility needs or both. From 8 April 2013, Personal Independence Payment replaces DLA.

[e] Based on self-report data from the Behavioral Risk Factor Surveillance System (BRFSS) conducted across 50 US states

Arthritis-related joint pain and functional limitation may be a particular barrier for obese adults attempting to manage their arthritic condition through physical activity.[19]

Osteoarthritis is a disease characterised by joint problems including degeneration of cartilage and its underlying bone. It is the most common form of arthritis and one of the leading causes of pain and disability worldwide.[20] Osteoarthritis can affect any joint but the knee, hip and hand joints are most commonly affected. Osteoarthritis is more common and more severe among women.[21] It is estimated that in the UK, 3% of women and 2% of men aged 45–64 visit their general practitioner at least once a year with osteoarthritis. This rises to 10% of women and 7% of men aged 75 and over.[22] Arthritis Care states that there are currently 8.5 million people living with osteoarthritis in the UK. Given the ageing population in the UK, the increasing occurrence of obesity and improved early diagnosis for osteoarthritis, it is estimated that this level could rise to 17 million people in the UK by 2030.[21]

The role of obesity as a strong risk factor for the development of knee osteoarthritis is well documented.[23,24] A recent review of prospective studies suggests that the exact mechanism linking the two is complex and is likely to involve both biomechanical (due to increased strain on the joints) and metabolic factors.[23] Analysis of the 1946 British birth cohort study found that prolonged elevated BMI throughout adulthood carried a high risk of knee osteoarthritis.[25] A recent meta-analysis found that obese people were almost four times more likely to develop knee osteoarthritis than those with a BMI below 25 kg/m^2 [26]

There is less evidence on the relationship between obesity and osteoarthritis of the hip or hand. A longitudinal study in Norway found that obesity was a weak independent risk factor for hand osteoarthritis but found no association between BMI and hip osteoarthritis.[27] However, a recent meta-analysis of 11 studies involving over two million people concluded that the risk of hip osteoarthritis increases with BMI.[17]

Back pain

Low back pain is a common disorder affecting around one third of the UK adult population annually.[28] Obesity and back pain are both associated with sedentary lifestyles, psychological distress and/or low educational and employment status.[29]

A recent meta-analysis found that overweight and obesity are associated with an increased risk of low back pain and the association was stronger for women.[4] Analysis of data from the Nord-Trondelag Health Study (HUNT) in Norway showed that physical inactivity and high BMI were associated with an increased risk of chronic pain in the low back, neck and shoulders.[30]

Mental health disorders

Mental health disorders are the second greatest cause of disability in the UK (Table 1). According to the Office for National Statistics, 16.2% of people in England have a common mental health problem such as depression or anxiety (19.7% of women and 12.5% of men), and 0.5% of people experience psychotic or bipolar disorders (0.3% of men, 0.5% of women).[31]

Obesity has been linked to common mental health problems such as depression and anxiety. A systematic review of longitudinal studies revealed associations in both directions between depression and obesity: people who were obese had a 55% increased risk of developing depression over time, while people who were depressed had a 58% increased risk of becoming obese.[32] A recent systematic review and meta-analysis found a positive but weak association between obesity and anxiety disorders.[33] Possible risk factors affecting the direction and/or strength of the association between the two conditions included severity of obesity, socioeconomic status, level of education, age, sex, and ethnicity.[34]

People with severe mental illness are at increased risk of obesity. A US study found that obesity was more prevalent in any individuals with serious mental illness (50% of women and 41% of men) than in the demographically matched comparison population (27% of women and 20% of men).[35] Other clinical studies have reported rates of obesity of up to 60% in people with schizophrenia or bipolar disorder.[36] Many antipsychotic, mood-stabilizing, and antidepressant medications commonly used to treat severe mental illness are associated with weight gain.[37]

Learning disabilities

Around 2% of the UK population has a learning disability[f] and less than a quarter of this group are known to local health and social services.[38] People with learning disabilities are more likely to be either underweight or obese than the general population.[39] A report by the Sainsbury's Centre for Mental Health in 2005 found that the rate of obesity among people with a learning disability was significantly different to those without such a disability (28.3% compared to 20.4%).[37]

The reasons for this higher prevalence of obesity in people with learning disabilities are a complex mix of behavioural, environmental and biological factors. Women, people with less severe disabilities and those living independently or with less supervision are at increased risk of developing obesity.[39,40] Genetic disorders such as Prader-Willi syndrome carry a high risk of severe obesity and it has been estimated that 24–48% of adults with Down's syndrome are obese.[7] Psychotropic medication, used by 30–50% of adults with learning disabilities[40] can also lead to weight gain.[41]

People with learning disabilities are at risk of obesity at an earlier age than the general population and as a consequence are likely to experience obesity-related health problems at a younger age.[42]

[f] People with learning disabilities have significant and widespread difficulty in learning and understanding. They will have had this difficulty since childhood. The term 'learning disabilities' does not include specific learning difficulties such as dyslexia, specific social/communication difficulties such as Asperger's syndrome or significant and widespread difficulty in learning and understanding that are acquired in later life. People with learning disabilities are more likely to have autism than people who do not have learning disabilities. (Learning Disabilities Observatory)

Obesity, disability and inequalities

A substantially higher proportion of households with one or more disabled member live in poverty compared to households where no one is disabled.[43] Disabled people are far less likely to be employed than non-disabled people (46.3% compared to 76.2%) and around twice as likely to have no qualifications.[44]

A recent report on disability and health inequalities for WHO Europe found extensive evidence that people with disabilities experience significantly poorer health outcomes than their non-disabled peers. Reasons for this include:

- exposure to socioeconomic disadvantage increases the risk of health conditions or impairments associated with disability and poor health
- some health conditions or impairments associated with disability involve increased risk of secondary health conditions such as pressure ulcers and urinary tract infections
- disability discrimination reduces access to timely and effective health care.[2]

Obesity is associated with social and economic deprivation across all age ranges[45] and puts adults and children at greater risk of secondary conditions such as type 2 diabetes, cardiovascular disease, osteoarthritis, cancers, mental health disorders and liver disease.[46,47] Obesity rates are also significantly higher among some minority ethnic groups.[34] Raised prevalence of obesity among people with disabilities may contribute to other health inequalities such as elevated mortality rates and a high level of unmet healthcare needs.[42] Being obese may generate additional stigma for people who may already be stigmatized because of their disability.[48]

Discussion

Whether obesity is the result of disability or a contributing factor to disability, a variety of social, environmental, biological, psychological and behavioural factors may be involved. These factors include chronic disease, medication side-effects, genetic factors, mental health problems, lifestyle factors (related to both physical inactivity and diet), stigma and reduced social contact.[8,9,32,34,48,49]

It is unclear to what extent the two-way relationship between obesity and disability is a cause or a consequence of factors associated with both conditions. Age, sex, ethnicity, level of obesity, type and severity of disability, socioeconomic status and living arrangements all appear to moderate the association between the two.[4,5,7,34,39,40] It is difficult to separate out these confounding factors. For example, people with disabilities may be at a greater risk of obesity because they are more likely to have lower socioeconomic status than those without disabilities, whilst older people with arthritis may be at a greater risk of obesity because arthritis becomes more prevalent as we age.

Obesity increases the risk of developing conditions including type 2 diabetes; some cancers; heart and liver disease and mental ill health. It adds a further layer of difficulty for people with disabilities and their carers, with those who are severely obese experiencing increased physical problems in daily life. For those who are disabled and obese, social and health inequalities relating to both conditions may be compounded. This can lead to socioeconomic disadvantage and discrimination, with reduced opportunities for community participation, employment and leisure and poor access to healthcare services.[9,49]

There is a lack of high quality population level data on adult obesity and disability prevalence in England. If it were available it would help to improve understanding of the complex relationship between obesity and disability, document health inequalities, and identify those at most risk.[49] Methodological issues relating to data on adult disability and BMI in the UK are highlighted in appendix 2, along with recommendations for improvements.

Obesity is a key risk factor for the most prevalent disabling conditions in the UK including arthritis, back pain, mental health disorders and learning disabilities. These conditions currently account for over half of all disability living allowance claimants. Rising obesity levels, obesity onset at younger ages, and people living longer with disabilities means that obesity-related disabilities are increasing.[5]

Obesity, especially severe obesity, is associated with retirement on the grounds of disability.[50] Severe obesity can impact on social care costs with requirements for housing adaptations, specialist carer support and transport services for severely obese people. Recent analysis of the Global Burden of Disease Study highlights the rising burden of chronic disability in the UK.[15] Health problems associated with being overweight or obese cost the NHS more than £5 billion every year [51] and this is set to double by 2050.[52] Impacts of the ageing population and levels of long-term illness and disability hold significant implications for health and social care services.[45]

Implications for health and social care

Key issues for health and social care providers highlighted in the literature include:

- According to recent findings from the Global Burden of Diseases, Injuries, and Risk Factors Study 2010, the challenges presented by chronic disability in the UK *'require strong national and local leadership to ensure an effective multi-sectoral integrated response is achieved and sustained'.*[15]

- Collaboration between professionals working in the field of disability and those working in obesity could help lead to improved prevention, early detection, and treatment for people at risk, ultimately reducing the burden of both conditions.[42]

- Local authorities can help to achieve improved health outcomes by bringing together local services, partner organisations, carers and user groups to address obesity and disability across all sectors.[53, 54]

- It is important that health and social care providers investigate the barriers that people with disabilities and obesity may face in access to health and preventative services and make efforts to address them.[12]

- Making adjustments to policies, procedures, staff training and service delivery may help with the provision of services that are easily and effectively accessed by people with disabilities. This could include addressing problems in understanding and communicating health needs, access to transport and buildings, and tackling discriminatory attitudes among health care staff and others.[2]

- There is a need to prioritise active support for people to live independent and healthy lives. It is important that health promotion initiatives recognise the limits of information-giving and harness insights from behavioural economics and other disciplines to understand how to change the behaviour of individuals and communities. This includes supporting people to make healthy choices, such as through the design of neighbourhoods that facilitate exercise.[55]

- It is important to evaluate the effectiveness of interventions to prevent or reduce obesity among people with disabilities, as well as interventions used in the management of disabilities in people who are obese.[56]

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Appendix 1: Data analysis

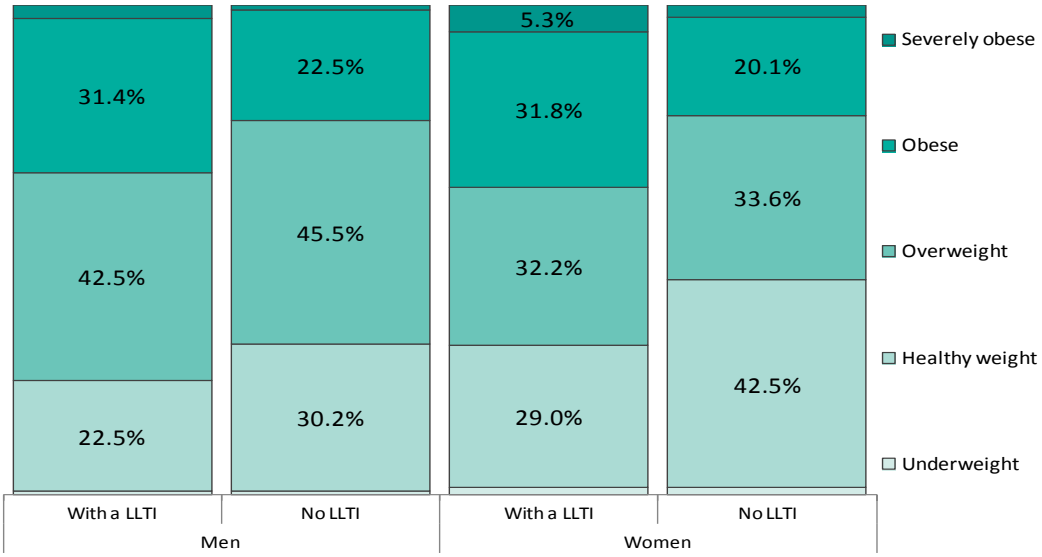
There are limited data collected on BMI and disability in England. However, relevant data are available from both the Health Survey for England (HSE) and GP Practice data. Analysis of data from these two sources is described below.

Weight status, limiting long-term illness (LLTI) and sex

Figure A1 provides a breakdown of weight status by limiting long-term illness (LLTI)[g] and sex using combined data from the HSE. The HSE includes measured height and weight as well as self-reported LLTI. Analysis focuses on adults aged 18+ years (weighted for non-response).

The prevalence of obesity and severe obesity is greater among both men and women with a LLTI compared to those without a LLTI. Prevalence of severe obesity[h] is more than double among adults with a LLTI. Men and women with a LLTI have a similar prevalence of obesity, but men with a LLTI are more likely to be overweight (42.5%) than women with a LLTI (32.2%).

Figure A1: BMI category of adults (aged 18+) with and without a LLTI by sex



Where the proportion of adults in a BMI category is less than 3% the actual percentage figure is not shown.
Source: Health Survey for England. Combined data from 2006–2010

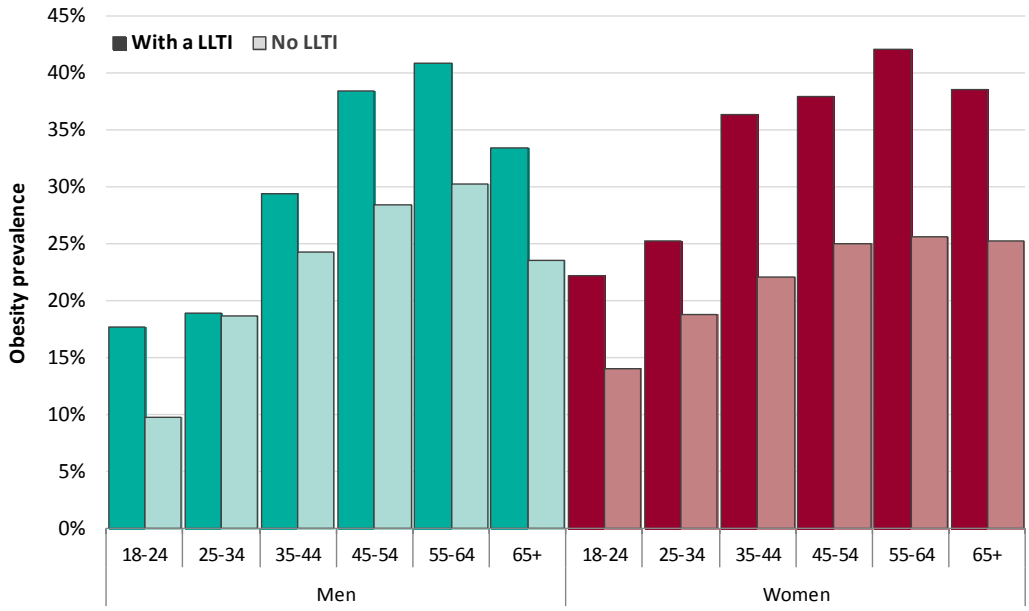
[g] Refers to following questions:
Do you have any long-standing illness, disability or infirmity? By long-standing I mean anything that has troubled you over a period of time, or that is likely to affect you over a period of time? (Yes or No response)
Does this illness or disability/do any of these illnesses or disabilities limit your activities in any way? (Yes or No response)

[h] See Definitions appendix

Obesity, limiting long-term illness and age

Figure A2 shows how the prevalence of obesity changes with age. Prevalence of obesity among adults with and without a LLTI increases with age up to the 55–64 after which it declines. Prevalence of obesity among adults with a LLTI is greater than those without a LLTI across all age groups for both men and women; for women, the prevalence of obesity among those with a LLTI is greater than that among men across all age groups except 35–44.

Figure A2: Prevalence of obesity among adults (aged 18+) with and without a LLTI by age and sex

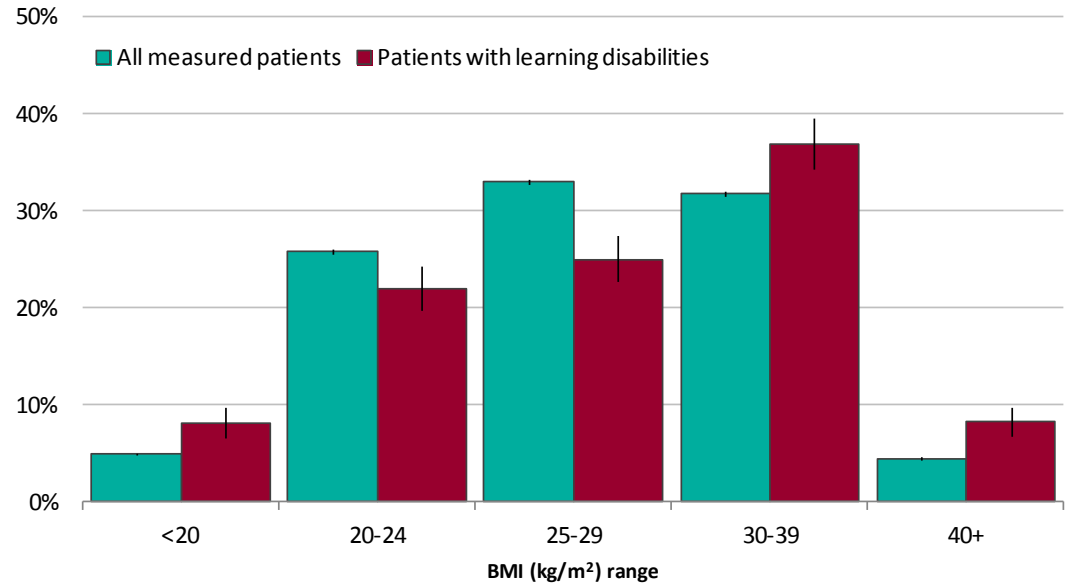


Source: Health Survey for England. Combined data from 2006–2010

Weight status of adults with learning disabilities

Figure A3 illustrates data extracted from general practice information systems. It compares the BMI range of adults with learning disabilities to the total registered practice population.[1] It shows that obesity, severe obesity and underweight are more common in people with learning disabilities, whilst healthy weight and overweight are less common.

Figure A3: Comparison of obesity prevalence among people with learning disabilities compared to the registered practice population* by BMI range



Source Note: GP Practice Information Systems. Analysis provided by the Learning Disabilities Observatory
BMI of under 20 is defined in this analysis as underweight, although a BMI of less than 18.5 is a more commonly used cut off point

* Includes 188,381 patients with BMI recorded (32% of all registered patients and 59% of people with learning disabilities)

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Appendix 2: Methodological issues

The following methodological issues may lead to problems with population level data on obesity among people with disabilities:

Under-representation of adults with disabilities in household surveys

General population surveys such as the HSE only sample people living in private households. As a result, people with disabilities who live in settings such as group homes or supportive living facilities are excluded.

Lack of assistance to enable people with disabilities to participate in surveys.[1] For example, interviewers not trained on how to overcome possible barriers to interviewing people with disabilities, such as communication or cognitive challenges.

People with disabilities may be more reluctant to respond to telephone-based surveys than the general population.[1]

Chronic health conditions, communication difficulties, and other impairments may not be included in disability categories used in population surveys.[2]

Reporting and measurement error

Self-reported height and weight are subject to a greater error rate among people with disabilities who may have difficulty measuring body weight and height, especially if they are unable to stand.[3]

Measured height and weight may be subject to inaccuracy among people with disabilities due to difficulties measuring people with physical conditions such as paralysis or spinal cord injury.[4]

Current BMI criteria for the general population have been found to significantly underestimate obesity levels when applied to populations with conditions such as spinal cord injury.[5]

The way in which disability is defined in terms of disabled and non-disabled functioning may vary depending on the context or age group. For example:

- Some older people may not identify themselves as having a disability if they consider their level of functioning appropriate for their age[2]
- People with mild learning disabilities may be missed if survey questions relating to disabilities are misinterpreted.

Limited availability of data on disability and obesity

There are limited data collected on BMI and disability in England.

- Most UK household surveys which include disability as an indicator (e.g. the Family Resources Survey) do not include height and weight data. Those that do use only broad definitions of disability, with little impairment-specific data.

- The Adult Psychiatric Morbidity Survey collects data on both height and weight among disability living allowance claimants, but the sample size is currently too small to provide robust figures.

Survey sample sizes are often too small for detailed reporting of weight status among disability subgroups. This is important because:

- even when using a broad definition of disability, analysis by weight status and ethnic or socioeconomic group may not be possible due to small numbers.

- people with learning disabilities comprise less than 5% of the total sample size in the HSE and people with severe or profound learning disability make up only one tenth of this proportion.[6]

- when investigating BMI among people with disabilities, if the whole BMI range is not investigated, the underweight group may be missed and the overweight group overstated.

There is a lack of robust primary care data on people with disabilities. Current prevalence figures available from the Quality and Outcomes Framework (QOF) are unadjusted by age, subject to practice and patient compliance and do not capture non-registered or non-attending patients.

A recent review of currently available Joint Strategic Needs Assessments (JSNAs) in England found that two out of five JSNAs contained no information on how many adults with learning disabilities live in the relevant area, and half contained no information on the health needs of adults with learning disabilities.[7]

Lack of comparable data on disability and obesity

Surveys often differ in the definitions of disability they use, which can make it difficult to compare results between them.[3]

Estimates of disability vary according to the purpose and application of the data, the perception of disability, the aspects of disability examined, the definitions, question design, reporting sources, data collection methods and expectations of functioning.[2]

Future options for analysis

There is a lack of high quality population level data on adult obesity and disability prevalence in England. If it were available it would help to improve understanding of the complex relationship between obesity and disability, document health inequalities, and identify those at most risk.[8] Options for more robust analysis include:

- Health Survey for England (HSE) disability boost sample[i]
- Psychiatric Morbidity Survey disability boost sample
- Analysis of self report height and weight data in the Active People Survey (APS) by limiting long-term illness
- Inclusion of height and weight variables in the Family Resources Survey (FRS)
- Enhancement of the Quality and Outcomes Framework (QOF) to better identify people with disabilities in GP practice settings[6]
- Investigation of the potential for data linkage across different data sets.[6]

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[i] A boost sample increases the size of a group with particular characteristics within the main survey to allow more in-depth analysis of that population (for example people with disabilities or older people).

Appendix 3: Search strategy

A search was conducted on Medline, Embase, Cochrane, TRIP and NHS Evidence, limited to English language and 2002-2012 for:

- Obesity and physical disability
- Obesity and mental health
- Obesity and learning disabilities

Appendix 4: Definitions

Body mass index (BMI) is a measure of weight status. BMI is a person's weight in kilograms divided by the square of their height in metres. The following cut-offs are used to classify adults:

Table A1: Body mass index (BMI) and weight classification in adults

BMI range (kg/m^2)	Classification
Less than 18.5	Underweight
18.5 – 24.9	Healthy weight
25.0 – 29.9	Overweight
30.0 – 39.9	Obese
Greater than or equal to 40	Severely obese

Reader Information

Title	Adult obesity and disability
Author(s)	Mary Gatineau Caroline Hancock Monica Dent
Reviewer(s)	Professor Gyles Glover, Durham University Professor Eric Emerson, Centre for Disability Research (CeDR), Lancaster University Dr Craig Melville, University of Glasgow
Publication date	June 2013
Target audience	Policymakers and practitioners
Description	An overview of the current evidence linking obesity and disability in adults. It looks in detail at the most prevalent disabling conditions in the UK: arthritis, back pain, mental health disorders and learning disabilities and discusses the implications for health and social care.
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