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Institute for Employment Studies

Obesity and Work

Challenging stigma and discrimination

Zofia Bajorek and Stephen Bevan

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Workplace Health and Wellbeing

It's been over a decade since Dame Carol Black wrote her seminal report "*Working for a healthier tomorrow*" (2008) in the UK, where evidence was provided showing the link between good employee health and wellbeing and business, individual and societal outcomes. The report concluded that if organisations placed an increased focus on improving workplace health then cost savings could be generated for the organisation and government. Importantly the review also noted that organisations need a conscious shift in attitude to ensure that both employees and employers understand and recognise the importance of preventing ill-health so that the workforce becomes motivated, resourceful and resilient attributes that have been reported to enhance strategic success (Vaughan-Jones and Barham, 2009).

Despite this knowledge, the rates of sickness absence in the UK is still high, with musculo-skeletal disorders and mental health conditions usually cited as the most common causes. For those with a chronic or long-term condition, if this is badly managed (by both the employee and the organisation) this can cause huge difficulties, and can lead to employees losing their jobs or struggling to return to work. In *"Improving Lives: The Work, Health and Disability Green Paper"* (DWP & DoH, 2016) a UK policy paper, it was reported that ill-health among the working age population costs the economy £100 billion a year, with sickness absence costing employers £9 billion a year. As a result, reducing long-term sickness absence is a UK Government and organisational priority.

The workplace health and wellbeing agenda is now being recognised globally. For example, the European Agency for Safety and Health at Work has developed 'Healthy Workplaces Campaigns' which aim to raise awareness of workplace issues and activities and create and promote practical guides and tools freely available. Similarly the European Network for Workplace Health Promotion is a platform available for all stakeholders interested in the improvement of employee health and wellbeing and helps to develop good practice at work. The European Parliament, the Council and the European Commission in 2017 also proclaimed a joint commitment to providing, healthy, safe and well-adapted work environments for workers in the EU, and the development of Eurofound's European Working Conditions Survey is an important source of information with regards to a variety of job functions and their association with the physical and mental health of employees.

However, with the rise in employee long-term health conditions putting their participation in work at risk, it is important to develop a work environment where everyone has a chance to fulfil their potential, and barriers and stigma preventing this need to be removed. One health condition that this still very much relates to is obesity.

What is Obesity?

Definition of Obesity

The World Health Organisation (2016) defined both obesity and being overweight as "abnormal or excessive fat accumulation that may impair health". An individual's Body Mass Index (BMI) is usually seen as a measure through which overweight and obesity can be classified, with overweight being defined as an individual having a BMI of 25-29.9 kg/m² and obesity defined as a BMI of 30 kg/m² and above. However, this can be further broken down into three standard classes of obesity: Class I Obesity (low-risk) with a BMI of 30-34.9 kg/m², Class II Obesity (moderate risk) with a BMI of 35-39.9 kg/m², and Class III Obesity (high risk) with a BMI of 40 kg/m² and above (Yarborough et al., 2018). BMI measures of obesity are coming under scrutiny because although a person's height is taken into consideration, their overall build is not, and thus it is not possible to distinguish between lean body mass (i.e. muscle) and body fat mass. Nuttall (2015) also commented that the BMI measurement does not provide the information as to where in the body the fat is located (for example subcutaneous fat in the hips may not be as serious a health risk as somebody with the same BMI but has the fat located in the abdominal area).

Prevalence of obesity

Obesity is a growing risk to the health of people in developed nations, and has been described as an epidemic that has become a global health concern (Goettler et al., 2017). The obesity challenge continues to grow with the prevalence of obesity tripling in many countries of the World Health Organisation European Region since the 1980's (Nigatu, 2016). Recent statistics from the World Health Organisation indicate that in 2016, more than 1.9 billion adults (those 18 and over) were defined as overweight, of which 650 million were obese. The statistics also reported that most of the world's population live in countries where being overweight or obese kills more people than being underweight. However, obesity is not just affecting the adult population. The prevalence of obesity is increasing in younger generations, with 41 million children under the age of 5 being reported as overweight or obese, and over 340 million children and adolescents aged between 5-19 were overweight or obese in 2016.

Public Health England (PHE) reported on the results of the Health Survey for England (2017) and commented on the recent UK obesity statistics. This survey found:

- Almost 7 out of 10 men are overweight or obese (67.2%), of which almost 3 out of 10 are obese (27.4%) compared to over 6 out of 10 women are overweight or obese (61.5%), of which 3 out of 10 are obese (30%).
- More overweight and obese women are able to identify themselves as having excess weight compared to men, despite more men than women being categorised as overweight and obese.

- The prevalence of severe obesity (BMI ≥40kg/m^2) has increased since 1993 for both men and women.

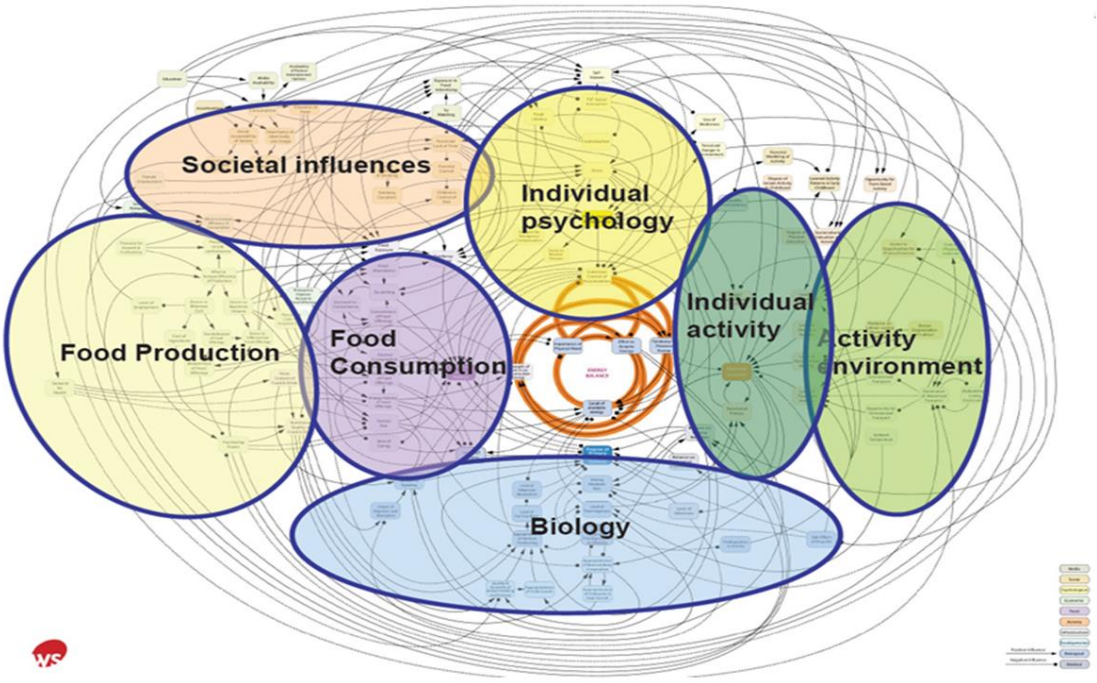
Other evidence from PHE (2014) suggests that obesity prevalence in England is associated with many indicators of socioeconomic status. For example, when discussing obesity and household income for women there is a linear relationship. Obesity levels decrease as household income increases, with women in the higher socioeconomic groups having significantly lower obesity levels than other income groups. The pattern for men was less clear. Similarly, when mapping obesity and deprivation (measured by income, employment, health and disability, education, skills and training, housing and services, crime and living environment), women living in the most deprived areas are more likely to be obese.

Although there have been reports that the rising rates of obesity have been increasing at a slower pace, there are still concerns about projected obesity levels with Agha et al., (2017) calculating that if current trends continued that by 2050 60% of males and 50% of women will be overweight and obese. The scale of this obesity epidemic makes a compelling case for action to prevent the obesity crisis worsen in the future.

Causes of obesity

There is still a common perception that obesity is caused simply by an increased calorific intake and decreased physical activity. However, recent reports have indicated that the causes of obesity are more complex and multifactorial. The Updated Foresight Report, *"Tackling Obesities: Future Choices"* (2011), discussed the many causes of obesity, and developed a model showing the complexity of the condition (see Image 1).

Image 1: The Foresight Report model of the underlying behavioural and environmental factors that can perpetuate obesity.



Source: Foresight (2011)

The report commented that the level of individual willpower and level of gluttony has not changed in comparison to previous generations, and human biology has not changed significantly, but society has altered with consequent changes to transport, work patterns, food production and food sales that has exposed an underlying biological tendency that many can experience to put on and retain weight.

It is clear in the report that personal responsibility for the rise of obesity levels cannot be ignored completely but the pace of change, especially notable in technology (the technology revolution pace is outstripping human evolution) means that for some weight gain may be inevitable and could be an involuntary consequence of the exposure to 'modern life'. There was also the discussion of a 'life course' component; obesity takes time to develop and excess weight takes time to lose, and so the risks of becoming obese may start at an early age.

Causes of obesity are also thought to be social and economic. The World Health Organisation (WHO) (2014) noted that obesity in European children is strongly associated with the socioeconomic status of their parents. Education was related to this, with the evidence suggesting that women with lower levels of education can be up to five times more likely to be obese than those with higher education. One of the conclusions of the WHO report was that obesity is related poverty and is likely to be passed on to subsequent generations. Interestingly, the report also noted that there are marked gender and ethnic differences in levels of physical activity, where low socioeconomic groups are more likely to have sedentary lifestyles, and levels of physical activity also declines as a result of becoming obese, and thus there begins a vicious cycle of obese people becoming less active, which can worsen their obesity.

Having a greater understanding of the causes of obesity is clearly critical when considering what prevention strategies different stakeholders could develop to reduce the risks of obesity developing, and what treatments may be more beneficial.

Consequences of obesity for health and the economy

Other researchers have focussed on the impact that obesity is having for the economy and for individual health. For example in a report by McKinsey Global Institute (2014), the social and economic costs of obesity were discussed with key statistics including:

- Obesity is responsible for around 5 percent of all global deaths
- The global economic impact of obesity was estimated to be roughly $2.0 trillion (2.8 percent of global GDP)
- Obesity is one of the top three global social burdens generated by human beings (smoking and armed violence, war and terrorism are the top two).
- In developed economies, the impact of obesity on healthcare systems alone is between 2 and 7 percent of all healthcare spending, which does not take into account the cost of treating associated diseases (discussed below). If this was included then some estimates suggest that healthcare costs could go up to 20 percent.

Agha et al (2017) focussed on the implications of obesity for public health, with evidence suggesting that obesity could have an effect on life expectancy (having ramifications on

the current life expectancy trends); it can result in a poorer quality of life (shortness of breath, back pain, psychological difficulties and reduced mobility) and can lead to risks of cognitive disability.

The research also reported that obesity was associated with a range of comorbid conditions which could lead to further health complications and other societal costs. For example:

- Diabetes is commonly associated with obesity (susceptibility of diabetes is 80 times greater among obese adults than non-obese adults). Consequences for individual health associated with diabetes include: kidney failure, blindness, leg ulcers and congestive heart disease.
- Osteoarthritis associated with obesity can affect the knees, hips and lower back as a result of the extra pressure placed upon them and the gradual wearing away of cartilage. This can lead to difficulties in walking and other movement.
- Coronary Heart Disease (CHD) susceptibility is increased 2-3 fold in obese individuals, and it has been calculated that obesity accounts for 5 percent of CHD deaths in men and 6% in women.
- Cancer is increasingly prevalent in obese individuals, with obese adults 40 percent more likely to die from cancer than non-obese. Both obese men and women have a higher risk of developing cancers of the oesophagus, colon, rectum, kidney, thyroid, gallbladder and pancreas.
- Emotional and psychological problems as a result of obesity can occur through issues related to lower self-esteem, anxiety, depression and in extreme cases suicide. Individuals with obesity are 3-4 times more likely to have depression in comparison to non-obese. The research has also suggested that as a result of lower self-esteem caused by obesity individuals may develop further unhealthy coping mechanisms including binge-eating and social isolation.

It is clear that reducing the prevalence of obesity is an important aim both for individuals and society, but questions are raised as to whose responsible for investing in tackling the problem, especially as it is such a complex and multi-causal condition. The UK Government is developing long-term policies with the aim of sustainable change, but has realised that this can only be achieved through the active engagement of a range of stakeholders including: schools, communities, families and individuals.

The National Audit Office (2012) in the UK argued that tackling obesity requires a concerted effort by national and local agencies and other partners, but that central Government needed to have a central role in ensuring that policies were enacted. For example, in the UK, the Department of Health has a role in setting and developing national obesity strategies and designing legislation. Public Health England has a role in supporting all parts of the public health system, including highlighting where progression has been made and where focus is still needed, and providing evidence based research on best practices to improve obesity related public health. Local Authorities have a lead role in implementing obesity strategies, especially where obesity has been identified as a local priority.

However, researchers are identifying other stakeholders that could have an influence on the health and wellbeing of individuals that affects local economies, and environments where interventions and prevention strategies could be introduced. One such stakeholder is the workplace.

Obesity at work

Bullen and Feenie (2015) in an article focussing on the human cost of failing to address obesity reinforced the argument of the urgent need to tackle obesity highlighting the widespread impact of the condition on physical health, mortality risks, reproductive health, stigma and importantly, employment. NICE (2013) reported that the effects of obesity also extend to working life, with issues related to productivity, absenteeism and presenteeism, as well as the level of discrimination that people with obesity can face at work, the likelihood of being employed with obesity and opportunities for promotion and progression.

In the *Guidelines for the Prevention of Obesity at the Workplace* (2009), it was discussed that adults now spend a significant part of their lives either in the workplace, or working and consequently there is a need to understand the role that work and the workplace can have for obesity, the consequences of obesity at work and the exploration of avenues for its prevention. The WHO (2004) previously recognised the workplace as an important and appropriate setting for health promotion, and combining this with now at least a decade's worth of evidence highlighting that a healthy and motivated workforce is fundamental to ensure both social and economic wellbeing, it would seem amiss if the workplace was not included as a vital stakeholder when discussing the obesity dilemma.

The *Guidelines for the Prevention of Obesity at the Workplace* (2009) provided a range of reasons as to why employers should invest in the health of their employees and why the workplace is a valuable setting to do this, which include:

- Many disorders that employers suffer from are preventable.
- Many disorders that are commonly found in the workplace are precursors to a range of other conditions that can also have an impact on employee productivity.
- Improvements in the health risk profile of the employee population can lead to reduced absenteeism and healthcare costs and improved productivity.
- Well designed and well implemented worksite health promotion and prevention activities can be cost-beneficial. They can save more money than they cost, and thus this can produce a positive return-on-invention.
- The workplace is a logical and natural setting given the amount of time that people spend in work. Employers have the opportunity to reach a large number of employees, and so this is an efficient means for information transfer and interventions.
- There is a greater opportunity to encourage employees to join health programmes, and it may provide the chance to reach out to those who would not seek help personally.

- Employees may be able to provide social support to each other, especially if any health programme is incorporated into an office routine, then employees will routinely see each other.
- Having the health programme in the workplace may also be good for evaluative processes, as there is an opportunity for data collection and analysis, and could also allow for the follow-up and evaluation of participants.

Consequently, it is important to understand just how and why the work environment can have an impact on obesity levels, but also what the implications of obesity are for employment.

The impact that work can have on obesity

Among workplace psychologists there has been a large amount of commentary regarding the changing nature of work; changes in working hours (both in terms of length of hours and the nature of the work), the impact of technology at work, and psychosocial work factors. There is some evidence to suggest that the ways that some roles are designed and factors in the workplace environment can have an impact on obesity.

Shift work

With changes in work practices and the need for some organisations to be 'always on' and provide services, some employees are required to work more 'unconventional hours' or work on shift rotas (Eberly and Feldman, 2012). Nigatu et al., (2016) provided evidence suggesting odd and irregular working hours can have negative effects on health as a result of changes to biological rhythms, sleep patterns and social isolation. Eberly and Feldman (2012) in their evidence review answering *'does shift work make a significant contribution to the risk of obesity?'* found a range of evidence to suggest that shift workers displayed higher frequency of obesity than employees who worked exclusively during 'normal' daytime hours. In one study comparing night shift workers to day shift workers, with all other factors controlled for, night shift workers had a higher average BMI (and a higher prevalence of BMI in the obese categories) in comparison to day shift workers. The review also discussed two longitudinal studies indicating that shift work is a risk factor for obesity, with work patterns analysed over a ten year period showing those who had done shift work for the whole ten years had significantly higher BMIs than those who had remained on normal day working hour routines. Yarborough et al., (2018) also discussed the impact that shift work can have on sleep and the consequences that this can have for developing obesity. Oksanen et al., (2013) reported how in a large study of Finnish workplaces sleep problems and obesity clustered among workers in the same unit with similar working patterns, with night workers showing correlations between their shifts and BMI measures.

A number of possible causes of shift-work related weight gain have been proposed. In qualitative interviews with nurses who undertake night shifts found that the employees ate foods high in sugar to try and combat the feeling of tiredness. However, they were also consumed throughout night shifts because of their ease of access in comparison to healthier options (Yarborough et al., 2018). It has also been considered that the altered

distribution of eating habits that shift workers experience could contribute to obesity – in that shift workers have a tendency to nibble in comparison to having steady meals throughout the day (Eberly and Feldman, 2010). Nobrega et al., (2016) in a qualitative study researching the role of working conditions for overweight and obesity reported that the food environment at work was an important factor, often citing inadequate eating facilities (including an adequate space for eating or lack of facilities to reheat your own food) and vending machines rarely offered healthy food choices. Their study also mentioned that the night shift workers often lacked a routine for their mealtimes, often having to eat alone.

Persson et al., (2006) also noted in their study that after night shifts, nurses felt too tired to exercise, opting to rest, and thus they had reduced opportunity for physical activity. However, the research noted that more work needs to be undertaken to understand the role of exercise and shift-work related obesity. The change in circadian rhythms has also been discussed as a reason for potential shift-work related weight gain as these are responsible for the body's behavioural and physiological rhythms which control sleep-wake cycles and eating behaviour (Eberly and Feldman, 2010). There appears to be some evidence to suggest that this could be a plausible hypothesis, with reduced sleep levels increasing hunger for calorie-dense foods which could lead to obesogenic behaviours.

Working hours

There is evidence to suggest that working in environments where employees work more than forty hours a week can be associated with obesity, especially if they are exposed to a hostile work environment (Yarborough et al., 2018). Au et al., (2012) reporting on panel data from the Health and Retirement study found that elderly employees who worked over fifty-nine hours in a week, were nearly 30 percent more likely to gain weight in comparison to those who worked less. Women who work increasingly long hours were also associated with higher levels of weight gain. Time pressures and work schedules were also discussed by Nobrega et al., (2016) in their study looking at obesity and work, with participants expressing challenges to complete tasks often resulting in skipping lunch breaks and unhealthy snacking, and long working hours resulting in limited time to prepare healthy meals and incorporating physical activity into their routines.

Psychosocial work factors

Over the last few years there has been a renewed interest in 'good work' and the factors that comprise this concept. Among these include work factors such as job demand and control, job design and job content and social interaction with managers and work colleagues. Research into work related factors that can have an impact on obesity have also considered psychosocial factors. Nobrega et al., (2016) noted that those with low control and low autonomy in their work often reported feelings of anxiety in relation to job insecurity. In interviews participants spoke about how low levels of autonomy and high job pressures and demands had implications for the time employees had for breaks and meals and consequently the quantity of food and the pace in which it was eaten. The associated stress and anxiety led to the interviewees choosing 'comfort food'.

Yarborough et al., (2018) in their review of the literature also described a number of studies indicating that psychosocial factors can have an influence on BMI. Studies indicated that social stressors (e.g. levels of job control and conflict with co-workers) were positively correlated with BMI, with low decision latitude and limited opportunities to make or be involved in organisational decisions also being associated with obesity. Nelson et al., (2014) studied the implications of age and workplace characteristics for BMI finding that experiencing harassment at work was an important characteristic of work that was associated with obesity. They noted that previous research has shown an association with workplace harassment with psychological distress and elevated blood pressure, but others have argued whether those who are obese are more likely to experience harassment as a result of their obesity and the stigma attached to the condition. Research has also reported that physical threats at work were moderately associated with weight gain, and receiving hostile gestures and being sworn at were associated with both obesity and low levels of physical activity.

Social interactions are an important part of developing a good work environment and work culture. The role of leaders and managers are thought to be critical in this. Quist et al., (2013) studied a range of social work factors and their association with overweight or obesity, finding that high-quality leadership was associated with weight loss among male employees, but high role conflict was a factor correlated with weight gain in female employees. Nobrega et al., (2016) noted that in their focus groups poor interpersonal treatment (e.g. verbal abuse by supervisors, sexual harassment, assault and conflicts with co-workers) was subsequently associated with the development of depression and/or anxiety and increased levels of stress, resulting if altered eating patterns (either overeating, or in a few cases under-eating due to low appetite). Yarborough et al., (2018) concluded that further research into the social factors of work could provide further insight into why this can lead to weight gain or obesity, and the development of more targeted (and maybe more effective) workplace interventions.

Sedentary behaviour

Over the last few decades there has been an increase in the level of technology introduced and integrated in the workplace which, it has been argued has resulted in the workplace becoming more sedentary. This reduced level of physical activity in some sectors (particularly those highly automated) has led to the associations with weight gain. Church et al., (2011) researched the role of occupational physical activity and energy expenditure over the last five decades in American workers and the relationship with obesity, finding that energy expenditure decreased more than 100 calories, which accounted for a significant proportion of weight gain for employees. However the literature review by Yarborough et al., (2018) cited other evidence to show there is no association between sedentary work and obesity, and interventions to increase activity at work, such as standing desks had no impact in preventing obesity at work. This inconclusive evidence was also reported by Shrestha et al., (2016) who studied the impact of obesity at work, and noted that although surveys have shown a marked decline in physical activity and an increase in sedentary behaviour cross-sectional and longitudinal studies do not strongly support the hypothesis between sedentary work and obesity.

In summary:

- There is a range of evidence to suggest that shift-work can have an impact on employee obesity levels, as a consequence of a range of factors including eating behaviours, changes in metabolism and sleep patterns.
- Employees who undertake long working hours, particularly if this is based in hostile working environments may be at a higher risk of becoming overweight or obese.
- Job design could have an impact on the development of obesity – for example employees with reduced autonomy, few opportunities to participate in decision making and increased psychosocial stress maybe more at risk of overweight and obesity.
- The evidence regarding whether the increase in sedentary work that has occurred over the past few decades and the link to obesity is currently inconclusive and requires further research.

The impact of obesity on work and productivity

Although obesity has often been described as a 'public health concern', there is now evidence to suggest that obesity could have implications for employee productivity, and absenteeism (absence from work because of illness or other factors) and presenteeism (lost on-the-job productivity) in organisations. Goettler et al., (2017) added that obesity could also be associated with permanent work loss which includes costs related to unemployment benefits, and may lead to further burdens for the National Health System.

Absenteeism and presenteeism

Public Health England (2014) noted that in the UK in 2014 there were 16 million days of sickness absence reported due to obesity. Ricci et al., (2005) found that obese workers were significantly more likely than their normal-weight counterparts to produce poor quality work and report limitations in the amount or type of work they are able to undertake. The research also highlighted that obese employees also experience more disability and lost work days than 'normal-weight' employees. Interestingly, the researchers also found that although almost 10 percent of obese workers in a survey reported a health related sickness absence in the previous two weeks, over 40 percent responded that they had health related reduced performance at work in the same period. The study estimated that the total annual cost of health related lost productive time was $42.29 billion. Additionally, in comparison to normal-weight employees, obese workers cost US employers an estimated $11.7 billion a year in excess health related lost productivity, with health conditions such as musculoskeletal pain, diabetes and digestive problems.

More recent studies have also confirmed this link between productivity and indirect costs loss due to overweight and obesity at work. For example, Goettler et al., (2016) undertook a systematic search of the evidence of this topic, and found that although estimated costs related to absenteeism at work varied between studies, the majority of the studies found that overweight and obese employees cost organisations more in short-term sickness absence costs in comparison to their normal weight counterparts (with obesity providing higher costs). The authors concluded that compared with normal weight

employees, individuals with obesity missed more time from work (both long-term and short-term absence) and worked less productively, resulting in higher indirect costs. The study also reported evidence indicating higher costs related to presenteeism, usually assessed using employee surveys, with costs related to obesity being higher than those of overweight employees.

Sanchez Bustillos et al., (2015) undertook a study assessing work productivity among adults with varied BMI in Canada using the Canadian Community Health Survey. The researchers found that relative to employees within the 'normal BMI' range, absenteeism was higher for those in obesity class III (7 percent absenteeism compared to 11 percent absenteeism). There was also a difference in presenteeism between obesity categories with normal weight reported (18.1 percent for class II obesity and 10.1% for normal weight). Howard and Potter (2014) having noted the link between obesity and higher rates of absenteeism, conducted a study to assess the relationship between overweight, obesity, related chronic health conditions and worker absenteeism. The authors hypothesised that since obesity is related to other conditions such as cardiovascular disease, diabetes and cancer, the presence of one or more of these conditions in combination with obesity could result in a moderating effect on absenteeism, and amplify the likelihood of absenteeism. The results highlighted that diabetes was the only chronic condition that acted as a moderator for increased absenteeism, but only in the presence of class III obesity. The researches however did acknowledge the cross-sectional nature of the study and suggested that more longitudinal studies would be able to capture the complicated underlying dynamics of overweight and obesity and related chronic conditions and how the interactions could change over time.

Work functioning

Nigatu et al., (2015) questioned whether the increasing prevalence of overweight and obesity in employment could have an influence on an employee's ability to meet their work demands (e.g. work scheduling; work outputs; interpersonal, physical and mental demands). The researchers measured this using the Work Role Functioning Questionnaire, and reported that work functioning (the ability to meet these demands) was significantly lower in obese workers as compared to overweight or normal weight workers. Scores for physical demands were significantly lower in obese workers, suggesting that physical impairment that may occur as a result of obesity (e.g. problems with joints, motion and posture) can have an impact on ability to undertake certain job tasks. However, the research found that overweight and obesity were not associated with work functioning scores for subscale scores for mental demands and or social or inter-personal demands.

Unemployment

NICE (2013) reported that obese individuals are less likely to in employment than those of healthy weight. Black (2016) also discussed evidence suggesting that being obese could itself cause unemployment, with the analysis finding that there was a two percentage point gap between the employment rate of normal and overweight adults, and the rate for obese adults. However, for those classed as severely obese the gap widened to ten percentage points. It was highlighted that the differences could be explained by a range

of other factors not related to weight, and that a direct causal relationship between obesity and unemployment could not be inferred. Additionally, the review also commented that there are many cases of obese people successfully in employment. Black's review did suggest that obesity could lead to worklessness indirectly, through related conditions but there is no data that can quantify this effectively. There was also evidence in the report suggesting that obesity is associated with early retirement, as obese and severely obese are over-represented among those aged 55 and above and have retired from paid work.

Black's review also looked at evidence of the number of obesity cases reported in the benefits system, having made the suggestion that if obesity does cause job losses as a result of associated health conditions they would be over-represented in the benefits system. The review found that in the UK there are currently around 1,600 claimants where the main disabling condition is obesity claiming Employment and Support Allowance (ESA), which was considered to be very low. An explanation for his was that obese people could be claiming for other health conditions, and further analysis of data suggests that an estimated 807,000 cases (or 35 percent of the ESA caseload) have conditions that could have arisen as a consequence of obesity.

Morris (2007) suggested that a number of reasons why obesity and unemployment could be related. For example, it was proposed that as obesity is a debilitating condition with all else being equal obese employees are more likely to be less productive and consequently less likely to be employed. This however, it was argued could start a vicious circle if it results in reduced socio-economic status and reduced income leading to individuals consuming cheaper and fattier foods and risking opportunities for future employment.

In summary:

- There is evidence to suggest that employees who are overweight and obese take more days of sickness absence in comparison to 'normal weight' employees. Research has also suggested that increased sickness absence results from obesity related health conditions.
- Levels of presenteeism were also reportedly higher among employees who are overweight and obese and this can lead to direct and indirect costs for organisations.
- Some research into levels of work functioning have suggested that the ability to meet pressures and demands of work may be reduced in those who are overweight and obese, although this was more prevalent in physical demands than mental or social job demands.
- Research discussing the link between obesity and unemployment has suggested that being obese could be both a cause and consequence of unemployment.

Obesity discrimination

One topic that was clear throughout researching for this paper is that the stigmatization and discrimination of those with obesity is still a pervasive issue, and prevalent in a number of domains including education, healthcare and employment (Beames et al., 2016). Even at the beginning of this year, it was reported that Pakistan International Airlines[1] sent a memo to all their cabin crew with the warning 'Lose weight or lose your jobs' – if cabin crew were overweight they would be grounded unless they lost their 'excess weight'. Although the memo did not mention what the desired weight for cabin crew was, it did say that cabin crew are expected to be 'slim, smart and fit' and when cabin crew are employed by the airline they are issued with a suggested weight chart. Puhl and Heuer (2009) reviewed the literature concerning the stigma of obesity, concluding that in the US the prevalence of weight discrimination had increased by 66 percent over the past decade, and was comparable to rates of racial discrimination (especially among women). They reported that common negative stereotypes about overweight and obese people included that they were lazy, unmotivated, lacking in self-discipline, less competent, sloppy and non-compliant, which led to overweight and obese people to feel vulnerable to social injustice, unfair treatment and have an impaired quality of life as a result of the stigma and consequent substantial disadvantages. Unfortunately, there is evidence to suggest that these practices occur in occupational settings.

Recruitment

There are a range of studies which suggest that being overweight or obese can have recruitment implications. For example, Morris (2007) suggested that obesity recruitment discrimination can occur because of common employer stereotypes (e.g. arising from the beliefs that obese people are less productive, lack the necessary knowledge and ability to undertake the role, are more costly – increased sickness absence, health costs and associated reasonable adjustments, or merely through an employer's distaste for obese people). Chernov (2006) reported that the lack of knowledge regarding the causes of obesity and that some employers still view obesity as something that people can control and so develop negative views about their behaviour. The research also suggested that hiring decisions may be based on whether applicants 'fit' the representational image or projection of both the organisation and the role. Chernov (2006) noted that an individual's potential physical limitations as a consequence of their obesity may be the most legitimate reason as to why some was not hired, especially if physical fitness was a crucial aspect of the role. However, care has to be taken when providing this as a reason, as this may not be a true reflection of an individual's ability to undertake the role, just the employer's perception that the potential employee may not be able to do the job.

[1] https://www.inquisitr.com/5239817/pakistan-airline-warns-staff-lose-weight-or-lose-your-jobs/

Swami et al., (2008) provided evidence that weight based prejudice can occur even before a recruitment interview begins – individuals with average weight were rated as significantly more desirable, whereas those described as overweight were judged more harshly and were thought to have more undesirable qualities. The researchers commented that participants in their study were most likely to hire applicants who had a BMI of 19.26 and that applicants on either side of this peak were less likely to be hired. Additionally, those thought to be 'normal weight' and 'underweight' were rated more positively, and those in the obese category were rated least positively. This led the researchers to conclude that the strongest stigma was towards people in the obese weight range. Caliendo and Lee (2013) suggested that obesity based recruitment discrimination may be more prevalent in women in comparison to men, for example, obese women had to make more job applications than their male counterparts and also engaged in more training related activities, but still experienced worse outcomes.

Pay

Puhl and Heuer (2009) in their review of obesity related stigma cited a range of studies that suggest obesity has a negative impact on pay. A number of studies discussed used evidence from the National Longitudinal Survey of Youth, finding that there were consistent wage penalties for obese employers even after controlling for a range of other factors (e.g. familial variables, socioeconomic factors and health). Results also suggested that the wage penalty was stronger for obese women than men (ranging from 2.3 to 6.1 percent and 0.7 to 3.4 percent respectively). A different study using the same survey reported that for white women, an increase of 64 pounds above the average weight was associated with a 9 percent decrease in wages. It was noted that this was the equivalent to 3 years of work experience or 1.5 years in education.

The review also commented on pay based obesity discrimination in European studies observing similar patterns, for example a 10 percent increase in the average BMI reduced the hourly wages of males by 1.9 percent and females by 3.3 percent, with the effects of discrimination larger in Southern European studies. Black (2016) also reported OECD research which suggested that obese people earn less than non-obese people who performed the same tasks in equivalent positions. The wage gap averaged around 10 percent, although one study reported the gap to be as high as 18 percent. However, it was also discussed that it was not able to infer the causal relationship between wages and obesity, as it is known that obesity is also associated with a range of other factors that can result in labour-market disadvantage, and consequently it is difficult to control for all of these.

Progression and promotion

Levay (2014) mentioned that obesity discrimination in organisational contexts should be an urgent object of inquiry, especially as it can also have implications on progression and promotion opportunities, and may have a pervasive role in everyday workplace interactions. A suggested reason for this was because unlike other sources of organisational health-related discrimination obesity is a conspicuous physical characteristic, which cannot be hidden. When issues of promotion were discussed professional obese women perceived that their excess body fat was seen as a signal of a

lack of self-control, and suspected that their managers doubted their capabilities because of their weight.

One aspect that is important in determining progression and promotion is the organisational appraisal. Bento et al., (2012) states that performance appraisals can have a profound impact on an employee's morale and performance which are vital for an organisations competitiveness and survival. However it was also mentioned that a 'good' appraisal depends upon rationality, objectivity and impartiality in decision making. Research has suggested that there can be errors in appraisals especially when the target is a member of a stigmatised minority and out-group, and this can lead to subtle discrimination. This can occur through differences in the filtering or summarising of information transferred, information being interpreted differently (dependent on the assessors being part of the in-group/out-group) resulting in alternative outcomes, and decision makers can also devalue the performance of obese employees and will reward them less favourably. If appraisals are used for administrative processes such as reward decisions, promotions etc., and this could mean that obese employees can receive lower pay and be bypassed for promotion.

Retention

There is a small amount of evidence to suggest that obesity can result in instances of wrongful termination of employment. Puhl and Heuer (2009) cited that instances that had been filed in legal cases in relation to obesity concerned employees fired because of their weight despite receiving positive performance evaluations and/or the dismissal as a result of their weight being unrelated to their role. The authors concluded that in such cases employees perceived that weight discrimination was the deciding factor for job termination.

Roehling et al., (2008) undertook some research to investigate whether there was any validity in the common stereotypes that overweight and obese employees face. In one study the results indicates that personality traits and demographic variables (e.g. race, gender, age) were stronger than the relationship between BMI and personality traits. A second study also reported no evidence of differences in personality characteristics of employees based on weight. Puhl and Heuer (2009) commented that these finding can be used to help challenge commonly held stereotypes about negative personality traits of overweight and obese employees.

In summary:

- A large range of studies indicated that obesity discrimination is prevalent in the recruitment process and with questions as to whether obese employees have the 'desirable characteristics' or 'fit' for the organisation.
- There is also evidence to suggest a pay disparity exists, with overweight and obese employees displaying reduced wages (even when all other factors were controlled for).
- Discriminatory practices were also evidenced in progression and promotion opportunities, with common stereotypical beliefs about obese employees being 'lazy' and 'lacking self-control) still very prevalent.

- There is a small amount of evidence to suggest that being obese has led to wrongful termination of employment, but more research is needed in this area.

Legal implications

Puhl and Heuer (2009) found that in self-report studies perceptions of weight-based employment discrimination remains common among obese people, from co-workers, colleagues, supervisors and managers, in the form of derogatory humour, negative comments and as discussed above, employment decisions. This has led some fellow researchers to ask the question whether obesity remains the last acceptable form of discrimination or whether more should be done. [2]

Should obesity be a protected characteristic?

As has been reported weight-based discrimination occurs in virtually all stages of the employment cycle, and Bento et al., (2012) used the term *'weightism is the new racism'* with anti-fat attitudes appearing to be at the same stage that racism was over half a century ago. As with race, obesity is highly visible, and there is still the added aggravating misconception that the causes of obesity are controllable which adds to the stigma and discrimination that obese employees receive, even though there is now strong evidence to suggest that other factors such as genetics, income and an individual's social environment can all play a role.

Puhl and Heuer's (2009) review found that obese employees struggle to have their weight seen as a disability, which makes it difficult to bring successful discrimination claims, and seemingly shows employers and co-workers that there is a legal freedom to discriminate among job applicants and employee practices on the basis of an individual's weight. In the US (in some states) there has been some legal precedent for employees who are morbidly obese to use the discrimination act to fight obesity related discrimination, on the basis that their obesity has substantially limited at least one major life activity. However, in New Jersey a court ruled that it was not unlawful for an organisation to suspend a cocktail waitress if they gained more than 7 percent of their bodyweight[3].

However the Kaltoft case in the European Court of Justice should make employers take note of the circumstances in which obesity could be regarded as a protective characteristic under equality legislation. In this case the EU court ruled in favour of a Danish child minder who claimed that he was dismissed by his local authority for being overweight. The court ruled that obesity could constitute a disability and that employers should treat their staff with such a condition accordingly. It was argued that obesity fell

[2] https://www.independent.co.uk/voices/obesity-awareness-week-workplace-discrimination-fat-overweight-health-ecj-a8726651.html

[3] https://www.personneltoday.com/hr/obesity-discrimination-long-wait/

within the concept of a disability, where under particular conditions the individual's obesity hindered the full participation of the employee in professional on an equal basis with other workers. Importantly the court made no definition of what BMI is considered to be obese, and also made it clear that the origin behind obesity itself was not important. What was important in this case was that the ruling did not go as far as saying that obesity is a disability, but does suggest that a health impairment caused by obesity requires employers to undertake workplace adjustments to be covered by legislation, especially if obesity restricted an employee performing their work duties to their full capacity.

Interventions

Questions therefore remain regarding what organisations can do to help employees who are overweight and obese to remain in work, and the role of organisations for health promotion. What interventions are currently being implemented in the workplace, and what evidence do we have of their success? Should organisations be focussing more on prevention, especially as rates of obesity are rising at a younger age?

Policies and initiatives regarding obesity in the workplace are emerging with this increased understanding that the workplace can have an impact on an individual's ability to maintain a healthy weight. NICE (2006) developed a range of recommendations for tackling the issue of obesity in the workplace, highlighting that all workplaces, particularly large organisations such as the NHS in the UK and local authorities should address prevention and the management of obesity as a result of it's impact on workforce health and costs to industry. The recommendations included: active and continuous promotion of healthy choices in food outlets (for both staff and clients); working practices and policies (such as active travel policies for staff and visitors); providing a supportive physical environment (improvements in stairwells, showers and secure cycle parking) and the provision of recreational opportunities (lunchtime walks, the use of local leisure facilities). Additionally any incentive schemes used in the workplace should be sustained and form part of a wider programme to support weight management, improvements in diet and increasing activity levels.

The Department of Health in the UK introduced the Public Health Responsibility Deal where organisations use pledges to support the health and wellbeing of their staff. In this way, organisations are making a public declaration showing their role in developing a healthy organisation, and highlighting the importance of primary prevention. Core commitments of the responsibility deal are: organisations recognising that they have a vital role to play in improving people's health; encouraging and enabling people to adopt a healthier diet; fostering a culture of responsible drinking; encouraging and assisting people to become physically more active and actively supporting the workforce to lead healthier lives. The deal was based on the understanding that improving staff health and wellbeing makes business sense as a fitter and healthier workforce is more productive and effective, and employees are likely to take increased responsibility in their health and wellbeing if a genuine commitment is made at the top level of an organisation.

Individual interventions

Yarborough et al., (2018) identified a range of individual interventions that could help those who are obese at work. It was highlighted that developing a programme of diet, physical activity and lifestyle modifications has been a cornerstone of individual interventions for those with obesity, and that success in weight loss had been reported, but there is currently limited evidence to suggest sustained behaviour. Barber et al., (2015) assessed the feasibility and benefits of providing weight management support programmes at work. The results demonstrated that there was enthusiasm for weight management services to be applied at work, and those who undertook the weight loss programme achieved significant weight loss during the 12 week trial period. For those who completed the course a 5.7 percent weight loss was recorded, which has been linked to a number of health related benefits including reduced blood pressure, improved cholesterol, a reduced risk of developing a range of cancers and developing type 2 diabetes. The authors concluded that the results indicate the weight loss intervention has the potential to benefit wider health problems often associated with obesity. Results from the questionnaire on self-reported behaviour change suggested that over the 12 week trial the participants reported an increase in healthy eating and activity, which were sustained over the six and twelve month follow-up period. Additionally mental and emotional health improved up until six months, but decreased between six to twelve months. The research also found that support from workplace management was important to facilitate the initiative and weight loss management change, and that limited time due to pressures at work made it hard to attend the 'support groups' that occurred during work hours. The authors recognised that more long-term research is required as it was unsure whether the weight loss was sustained, and that a self-seeking sample may not be representative of the workforce.

Yarborough et al., (2018) also discussed surgical interventions that individuals can undertake to help control their obesity. Bariatric surgery is one option for the treatment of obesity, which has its own advantages and disadvantages. For example on average patients tend to lose two-thirds of their excess body weight 1 year after the surgery has been undertaken, and maintained substantial weight loss in the long-term. Additionally other conditions comorbid to obesity were also seen to improve as a result of the surgery. Madura and DiBaise (2012), reported that the most successful bariatric surgery are those who demonstrate active and positive lifestyle changes in relation to both improved eating patterns and physical activity. However, the surgery is an invasive procedure, and can lead to a number of complications including an individual being left with excess skin, long-term implications of alcoholic misuse, and the loss of bone and muscle density. There are individuals who may not be suitable for surgery including those who may have binge eating conditions that could be continued postoperatively (Madura and DiBaise, 2012). For those with active depression or other psychological disorders this could also lead to negative outcomes.

Organisational interventions

As previously discussed, there are a range of arguments suggesting why addressing obesity and other health conditions at work can be positive for both the organisation and

the individual. Gabel et al., (2009) studied both employer and employee attitudes to current obesity programmes in the workplace, with both viewing weight management programmes as being both appropriate and effective, and the employers should be providing services that benefit their employees. The opinion that employers should offer obesity related services was thought to highlight that obesity can have serious implications for organisational and employee outcomes. However, the research did also note the level of stigma and lack of awareness regarding obesity was clear, with 93 percent of employers most likely to view obesity as a result of poor lifestyle choice and preventable. Common interventions highlighted by employers included: healthy snack provision, on-site exercise programmes, some programmes focussing more on general health issues, gym membership sponsorship, nutritional information in employee eating areas and on-site health facilities. Employees generally viewed these to be effective with exercise facilities and subsidising healthy foods assessed as being most popular. There were varying ideas as to what constituted 'successful', with ideas including: maintaining a new and healthy body weight for over a year and improvements in comorbid health conditions. Interestingly, only a minority of firms were willing to pay higher premiums for more obesity prevention of treatment benefits, even though larger employers were concerned about the links between obesity and reduced productivity and had economic concerns related to increased absenteeism and presenteeism. The authors indicated that there was evidence to suggest that employers believed they should not be acting alone, and that other stakeholders, such as the individual, doctors and policy makers also have a role.

Archer et al., (2011) undertook a review to uncover promising practices for the prevention and control of obesity in the workplace, uncovering six themes of practices for which there was convincing evidence:

- Enhanced access to opportunities for physical activity combined with health education: including activity programmes, workshops and classes and the provision of education (general health information, information about weight loss, nutrition etc.) within a worksite setting.
- Exercise prescriptions alone: involving planned or structured physical activity regimes given to individuals or groups that include specific recommendations for the frequency and type of exercise.
- Multicomponent educational practices: aimed at providing information about addressing health promotion programmes (healthy life-styles, physical activity and nutrition) and risk reduction programmes (weight management programmes, diabetes risks, cardiovascular risks)
- Weight loss competitions and incentives: which consist of rewards for weight loss or behavioural change to increase physical activity or improve nutrition. Rewards can vary in type and size.
- Behavioural practices with incentives: these teach behavioural management skills, modelling or demonstration, participatory skill development and individual benchmarking, with the provision of feedback and support for behavioural patterns. These practices are combined with incentives typically given for participation or completion of programmes.

- Behavioural practices without incentives: teach participants specific behavioural skills as discussed above but did not provide incentives.

The authors also noted that the best programmes and practice were those designed to meet the needs and preferences of the employees, however further research is needed to understand the long-term implications of these practices and whether one approach is best suited to a particular subgroup of employees.

The *Guidelines for the Prevention of Obesity at the Workplace* (2009) discussed how the prevention of obesity at work needs to include a complete assessment of the workplace environment to determine if certain tasks or roles pose additional threat to health and wellbeing, and once problems or areas of concern have been identified then appropriate measures need to be put in place to protect employee health. Generating high levels of engagement and participation is also really important and is a major component of the success of any obesity workplace health intervention.

Best practice recommendations for the prevention of obesity at work included:

- Conducting a needs assessment and identifying the health needs to be addressed
- Aim for changing behaviours that influence weight outcomes (raising awareness is important, but there is a necessity to address attitudes and behaviours related to physical activity and nutrition)
- Implement both physical activity and nutrition methods to address weight control issues
- Include environment and organisational change as part of the plan (addressing issues of workload, stress, shift-regimes, implementing improved food selection etc.)
- Negotiating management support (especially if practices are to be implemented during work hours)
- Emphasise employee participation (seek feedback from employees, monitor participation and drop-off rates, establish a committee of participants to help implement interventions etc.)
- Evaluation is essential to examine how well the programme is progressing, using multiple data sources including direct feedback from programme participants)

In summary:

- A number of individual workplace obesity interventions have been discussed, which usually focus around both diet and lifestyle modifications and weight management support programmes which can be both undertaken and supported by workplaces. However more evidence regarding their long-term sustainability is needed.
- Weight-loss related surgery has also been proposed, and although this can be successful in weight reduction, negative outcomes have also been reported (e.g. depression, excess skin management)
- Organisational stigma can still be a barrier with regards to workplace interventions, however evidence suggests that the best practices are those designed to meet the needs of their employees and combine both educational and practical interventions.

- Interventions also need to address organisational design and work practices, and ensure that correct management support is provided.
- There is still a need for interventions to be fully evaluated so best practice can be realised.

Future Research Agendas

Research into both health and wellbeing at work and obesity at work has developed over the last decade, but with a changing and ageing workplace, both topics are going to continue to be relevant for employers and society, and consequently it is important to keep up the awareness of these issues for researchers and policy makers. A number of future opportunities for study and further observations in these areas have been identified:

Future research topics:

- With evidence showing that discrimination is still occurring in many organisations and HR practices, research should be undertaken to understand what the root causes of workplace stigma are, and how they can be addressed. Does the stigma around obesity affect both genders equally? And how and why does the stigma affect HR management processes (e.g. recruitment, retention, promotion, pay)?
- Further research needs to be undertaken to understand what interventions are most applicable in workplace setting, and piloting and evaluating outcomes, both in terms of weight loss and organisational outcomes.
- Undertaking case studies in organisations which have had success in implementing weight-loss interventions could be conducted to understand the individual and organisational factors that led to their success, and create learning points for other organisations.
- Research could be undertaken to discover the role of both management and peer support in relation to both aiding the stigma and intervention implementation at work.
- Much of the research to date has been cross-sectional and thus conducting more longitudinal research in this area, especially to understand workplace factors that can lead to more sustained weight loss may be beneficial.
- To develop and write a practical tool kit and HR guidelines for the effective management of obesity at work.

Future policy agenda:

- It will be beneficial for the EU Member States to discuss how obesity discrimination is addressed in the workplace, and to see obesity as a protected characteristic in employment equality legislation.
- It is important for EU Member States to develop regulations surrounding reasonable adjustments at work, to ensure that functional impairments – e.g. reduced mobility – resulting from obesity can be considered under the equalities legislation.

- Helping those with obesity is not the responsibility of one stakeholder, and consequently, EU Member States need to consider what joined up action is needed from a range of stakeholders, e.g. Government policy makers, health advisors and employers can be to improve prevention and interventions for employees with obesity to aid them to remain (and be productive) in work.
- There is need to develop preventative strategies to aim to reduce the rates of obesity, consequently an education piece regarding the causes and consequences of obesity at work, and to develop a strong evidence base around this.

Conclusions

Employee health and wellbeing is becoming an important issue for organisations to respond to for social, productivity and economic factors. However, for employees with obesity there are clearly many barriers that need to be addressed for their needs to be effectively supported. Stigma and discriminatory practices are still common place, and an education piece as to the causes of obesity is clearly needed to dispel the 'it's the individual's fault' comments that occur in both the workplace and in society in general. As the evidence suggest, the workplace can both add to and be affected by obesity, and consequently having an non-discriminatory work culture, where employees have voice and autonomy and employee support is important to develop so employees understand that they are valued whatever their size.

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Whatever your professional and HR needs, get in touch:

Institute for Employment Studies
City Gate
185 Dyke Road
Brighton BN3 1TL
UK

Telephone: +44 (0)1273 763400
Email: askIES@employment-studies.co.uk
Website: www.employment-studies.co.uk