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11. Healthy Lifestyles

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11.1 Introduction

Although the data here is presented as for each lifestyle issue there are important links between them, such as there can be a marked difficulty quitting smoking alongside quitting other substances such as alcohol, with women more likely to cite anxiety as the main barrier (McHugh et al. 2017). Participants with a primary alcohol use disorder were almost 30% less likely than those with an opioid use disorder to be current smokers, despite similar lifetime smoking rates (p52). This clustering of lifestyles can also have an important impact on the overall consequence, for instance as seen in the risk of developing cancer (Kerr et al. 2017), such that most services are now moving to tackle these multiple issues at the same time, as seen in the Leeds Integrated Healthy Living Service (Ingold et al. 2015).

11.2 Tobacco use

Across England 14.1% of women smoke (17.7% of men), with an average of 11 cigarettes a day for women (12 for men), with a steady year-on-year decline up until 2015 – 2016, when it slightly increased in men, but remained static in women. The age group with the biggest decline in numbers is 18-24 years, with another big recent decline in the 25-34 years group which is the age bracket most likely to smoke (ONS 2017n). School aged girls are more likely to smoke than boys (4% vs 3% boys), but these represent the lowest level of smoking prevalence since the national survey began in 1982 (NHS 2017a).

In Leeds more men smoke (18.2% as compared to 17.5% for women), but there is a greater proportion of women smoking in Leeds than in the rest of Yorkshire and Humber and for England (Figure 1). Across Leeds smoking is greatest in the more deprived areas, with 35.3% of women in Middleton and 34.3% of women in Belle Isle North smoking as compared to 5.6% in Alwoodley.

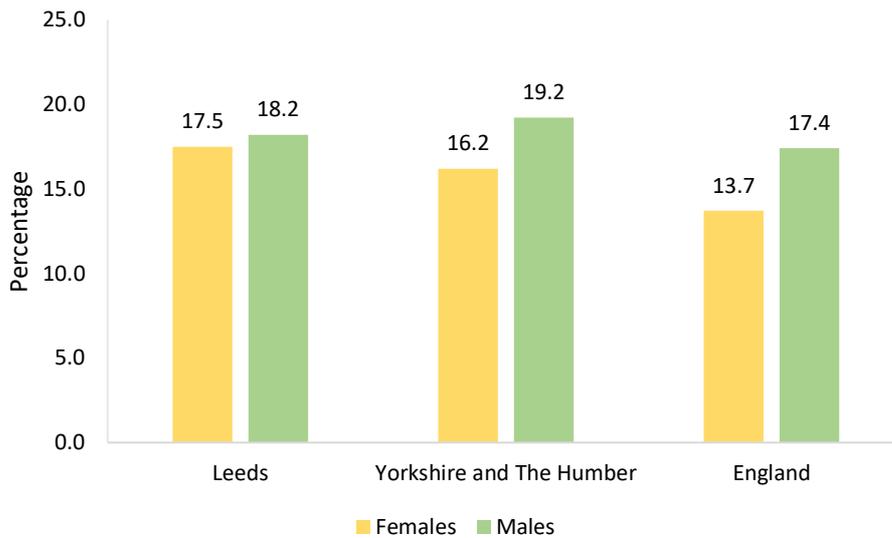


Figure 1 Prevalence of smoking (percentage), for females and males, 18+ years, 2016

In 2016, 3% of all admissions to hospital by women across England were a consequence of smoking, with 22% of admissions for conditions that can be caused by smoking, and 31,600 women (47,400 men) losing their life through tobacco related diseases (NHS 2017a). It is estimated that women who smoke lose at least 10 years of lifespan, with the hazard of continuing smoking over the age of 40 years 10 times higher than for those that quit (Pirie et al. 2013).

Women are more likely to smoke packeted cigarettes (62% vs 49.3% male), than hand-rolled (27% vs 37.3%) (ONS 2017o). Smokeless tobacco (paan, beel quid, snus, chewing tobacco) and non-cigarette tobacco (bidi, shisha) use is more prevalent within the South Asian community and is more common amongst women (Katie Wright, Colin Brodie and Gayan Perera 2013), but can be just as harmful as cigarettes, leading to mouth, oesophageal and pancreatic cancer along with other respiratory cancer, heart disease, respiratory disease and periodontal disease (NICE 2009; Cancer Research UK 2016). It is important to note that smokeless tobacco use during pregnancy can also lead to health problems for the child (England et al. 2010), including an increased risk of stillbirth, and may impact on fetal growth and an increased risk of pre-term delivery.

School children who are White or from Mixed backgrounds were more likely to smoke than those from Asian or Black backgrounds (NHS 2017a). In Leeds, the 'My

Health, My School' survey data (Leeds City Council 2018a) demonstrates that like most lifestyle factors, smoking becomes more prevalent as children get older. The prevalence of experimenting with cigarettes increases across the older age groups (Year 7 to 11) for both girls and boys but is higher among older girls compared to boys, however, for smoking prevalence (using more than 1 cigarette per day) is higher in boys compared to girls (Figure 2).

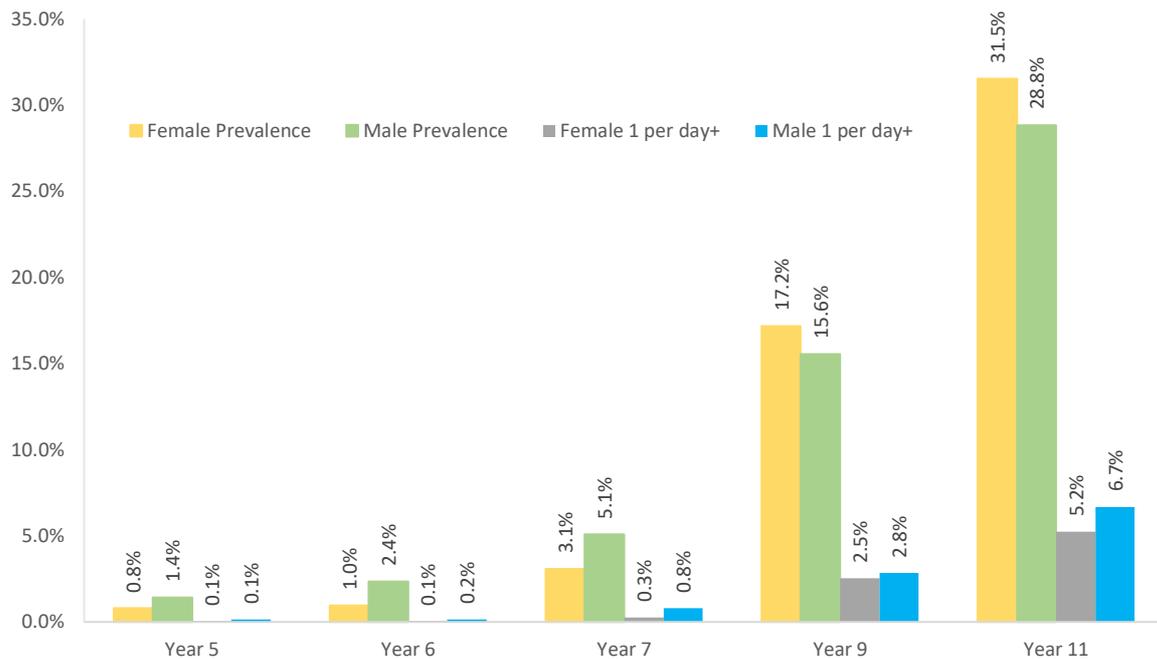


Figure 2 Children's smoking history in Leeds, - Percentage "ever smoked" and Percentage smoking over 1 cigarette per day by school year, 2015/16 to 2017/18

Girls have been found to be more likely to smoke because they feel it makes them look cool in front of their friends and are more likely to take up smoking if their close friends or siblings smoke (McGee et al. 2015). There is also the perception that it will help them to lose weight (Atenstaedt et al. 2016a). Smoking prevalence in girls is higher in those with low aspirations, with those that can envisage a more positive life and career being less likely to take up smoking (Atenstaedt et al. 2016b). What is promising is that the biggest reduction in smoking since the introduction of the smoking ban in public places has been observed among girls, with a reduction of 4.3% in regular smoking by 15 year old girls (Katikireddi et al. 2016).

In young adult women the motivation for smoking is influenced in some by a greater level of body dissatisfaction and eating pathologies, leading to both a drive for thinness (by smoking) and a fear of fatness (if they stop smoking) (Kendzor et al. 2009; Duncan et al. 2010; Copeland et al. 2016). This fear of gaining weight post-cessation was also found in a study of female smokers from a deprived community (Memon et al. 2016). The group of women interviewed also felt that hormonal fluctuations during the menstrual cycle and greater levels of stress were also significant barriers to stopping smoking and reasons for relapse.

Smoking prevalence is higher in sexual and gender minorities, with an earlier initiation in young girls (Watson et al. 2018). Across England, smoking prevalence in heterosexual / straight women was 16.7% in 2014 as compared to 25% in Lesbians, 22.7% in bisexual women and 18.8% in 'others' (ONS 2016e), with smoking prevalence in lesbian women higher than heterosexual men and gay men. In another study (Fallin et al. 2015), bisexual women were found to have the highest rates of smoking, which was attributed to greater internal stressors of not belonging to any group. Higher rates of smoking in the sexual and gender minorities have been attributed to greater sense of identity and fitting in with others, rather than just a craving, and as a result of higher levels of stress and discrimination (Nguyen et al. 2018; Watson et al. 2018).

In 2016/17 only 10.5% of pregnant women in England were smokers at the time of delivery in , which was below the national ambition of 11% and a big reduction from 15% in 2006/07 (NHS Digital 2017b). Across Leeds there were 9.8% of women still smoking at the end of their pregnancy in the first quarter of 2017/2018, down from 12.3% in the fourth quarter of 2014/2015. Smoking during pregnancy can cause serious health problems including complications during labour and an increased risk of miscarriage, premature birth, still birth, low birth-weight and sudden unexpected death in infancy (NHS Digital 2017b).The effect of smoking can still be seen in the grandchildren of women who smoked during pregnancy (Ding et al. 2017) with higher birth weight, higher risk of overweight, and higher BMI through adolescence and young adulthood. Women who smoke during pregnancy have also been found to be less likely to initiate breast feeding, even after adjusting for socio-demographic factors usually associated with this cohort of women (Simpson et al. 2019).

11.2.1 E-cigarettes (vaping)

There has been an increase in the use of electronic cigarettes (E-Cigarettes, or Vaping) in preference to smoking cigarettes. The most recent review from Public Health England has found that vaping poses a small fraction of the risk of smoking and is an important aid in smoking cessation (McNeill et al. 2018). There is no available data on vaping use in women across Leeds.

Women have been found to use e-cigarettes for stress or mood management and for weight control, whereas men are more likely to do it for enjoyment or to quit smoking due to health concerns (Piñeiro et al. 2016).

The advice relating to the use of e-cigarettes during pregnancy is that there has been little research done on the long term effects of vaping on the child's health, and it is better not to use them. However, they are significantly less harmful than smoking and so their use is a much better option than ordinary cigarettes (Smoking in Pregnancy Challenge Group 2017).

11.3 Alcohol use

The current guidance (DH 2016) on alcohol intake for women is the same as for men – not more than 14 units a week, avoiding heavy drinking sessions and taking several drink-free days a week. The majority of women do not drink to excess, with 22% claiming to be non-drinkers or having not had a drink in the last 12 months and 62% stating that they had not had more than 14 units per week according to the Health Survey for England 2016 (NHS Digital 2017c). However, for those that have higher levels of consumption, their risk of developing health problems is greater than for men for the same level of consumption. The health consequences for women drinking are now a great cause for concern in Leeds and elsewhere (Cameron 2018). Chronic liver disease is the 5th commonest cause of death and morbidity in the UK and it is the only cause that is increasing, with chronic alcohol dependency responsible for the majority of emergency admissions related to alcohol (Vardy et al. 2016).

An analysis of the economic and social costs of alcohol-related harm in Leeds in 2008-09, (Jones et al. 2011) came to £480m, spread across health and social care (13%), criminal justice system (29%), workplace and lost productivity (27%) and the wider social and economic costs (31%).

Alcohol intake in school children in Leeds (Leeds City Council 2018a) shows that girls from a lower start in year 7 (27.5%) have a higher rate of the catch-all category “drink at all” than boys by year 7 and year 11 (77% as compared to 73%) (Figure 3). However, boys have the higher “drink weekly” and “drink monthly” rates by year 11, with 1% of year 11 girls drinking daily as compared to 2.1% of boys.

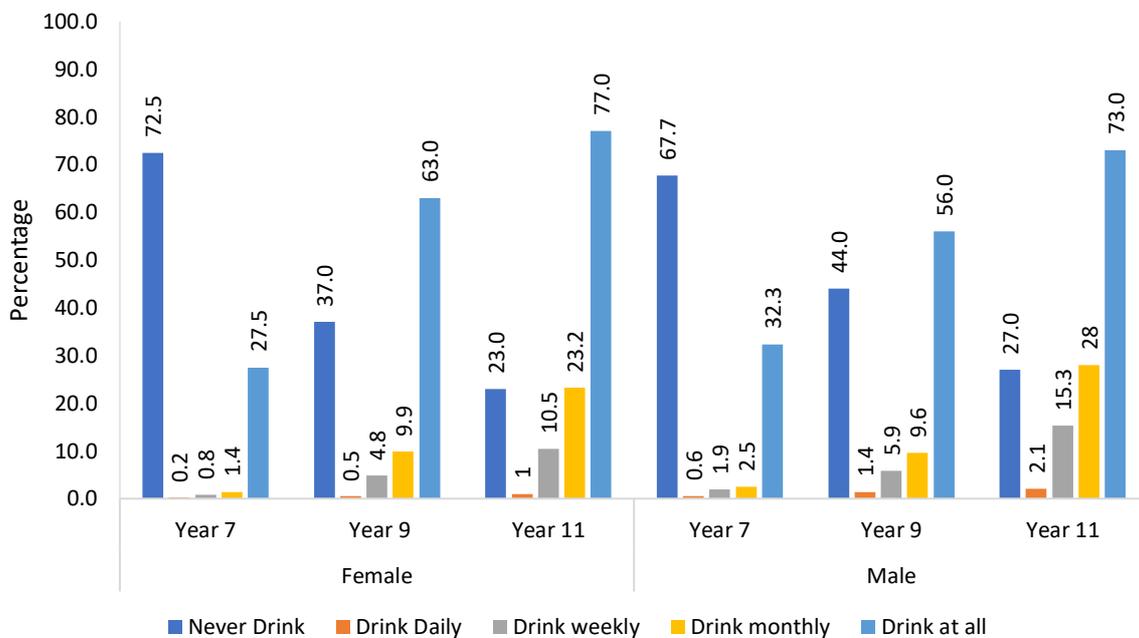


Figure 3 Three Year aggregate rates of school age alcohol consumption (percentage), Leeds, by sex and category: split by school year group

In adulthood there is a decreasing male-female gap in the use of alcohol, which is most evident in younger adults, where often females have overtaken males in their drinking levels. But for above the recommended limit (14 units), males still have the higher levels of consumption in Leeds (Figure 4).

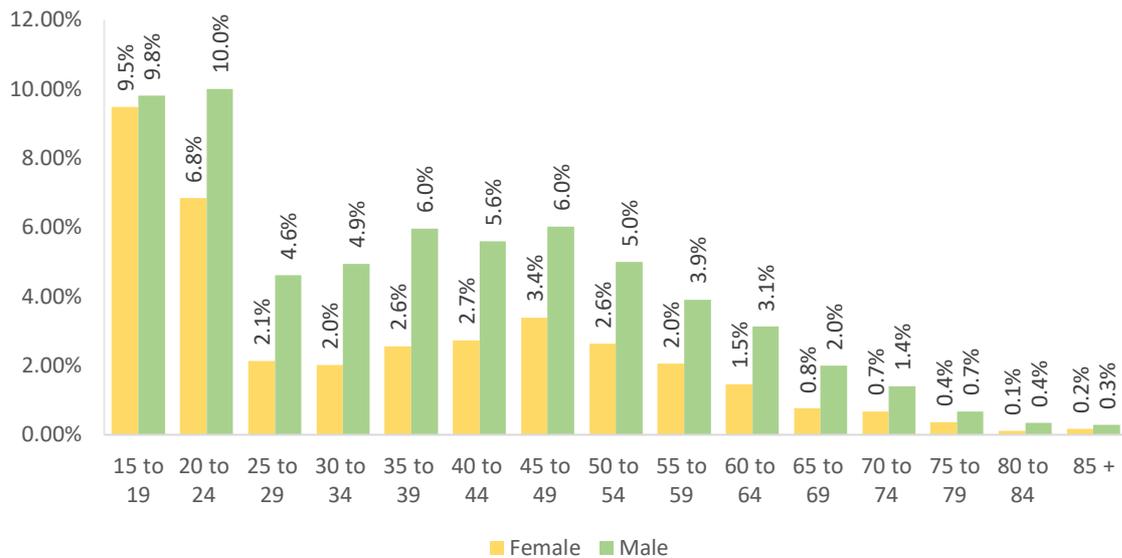


Figure 4 Consumption of over 14 units of alcohol per week, Leeds, 2018 (Percentage of total)

Audit data for Leeds was collected for 115,082 females aged 15 years and older. Of these, 3,242 had scored positive for ‘excess alcohol’ which is equivalent to 2.8% of those recorded. By ward, prevalence of excess risk among those recorded ranged from 0.7% in Garforth and Swillington to 11.3% in Headingley and Hyde Park and 9.8% in Little London and Woodhouse. Both of these areas have high student populations.

The threshold where alcohol becomes dangerous is lower in women than it is in men, so for the same level of consumption the health effects are more pronounced in women (Milic et al. 2018a). This is because women process alcohol at a slower rate due to having less body mass, more fat and a lower body water content, which leads to a higher concentration in their body and alcohol staying in a women’s system longer before being metabolised than it does in a man’s. In addition, women generally have lower levels of alcohol dehydrogenase (AHD), which is needed to metabolise the alcohol.

Regular consumption above the recommended levels of alcohol can lead to an increased risk of:

- Liver disease.
- Infertility (through the disruption of the menstrual cycle).
- Altered sexual performance.

- Breast cancer and other fat related cancers.
- Menopausal symptoms and osteoporosis.
- Higher levels of stress.
- Heart disease and hypertension.
- Loss of mental function. (Drinkaware 2017)

There is some evidence that alcohol is protective against ischaemic heart disease and diabetes in females (Griswold et al. 2018), however, these protective effects have been found to be offset by the risks associated with cancers, which are increased with consumption.

There has been a year-on-year increase in women dying of liver cancer as a result of alcohol (GBD 2016). This increase in the rate of death as a result of liver disease, has especially been seen in the older population, with the rate increasing from 30.9 per 100,000 in 2003 to 45.7 per 100,000 in 2016 in 70-74 year old females (55.5 to 76.2 for men) (NHS Digital 2018c).

Alcohol intake is higher overall in the wealthier areas of Leeds (Figure 5). However, the mortality rate is higher in poorest, with a mortality rate of 26.9 per 100,000 for women in the lowest decile in Leeds, as compared to 7.6 per 100,000 in the most affluent areas. This is thought to be a consequence of a greater susceptibility to the damaging effects of alcohol, the quality of the alcohol consumed, the interaction with other risky lifestyle factors such as smoking and access to health care (Jones et al. 2015).

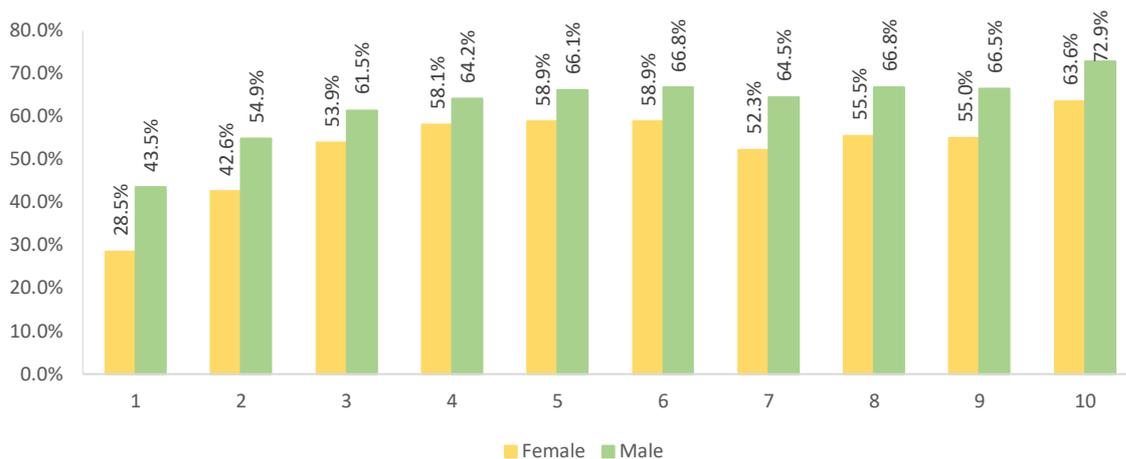


Figure 5 Consumption of any alcohol, by deprivation (IMD decile 2015)

Females account for a steadily increasing proportion of referrals into the Leeds-based St Anne’s alcohol detox and rehab centre rising from 28% in 2014/15 to 33% in 2015/16, to 35% in 2016/17 and to 41% in the first half of 2017/18. The young persons’ service of Forward Leeds shows a very distinct sex difference with regard to the primary substance of young people accessing the service. For young men the primary substance is cannabis but for young women it is alcohol.

It is important to understand the meaning of alcohol for women if we are going to make progress in helping women reduce dependency. Alcohol is often tied to women’s identity, giving them a sense of freedom and a way of avoiding their everyday roles and responsibilities (Emslie et al. 2014). In addition, for many women there are stressors in their lives that are a trigger to drinking, such as on-going interpersonal violence (Becker et al. 2017). Women are also more likely to drink more alcohol during the premenstrual phase of the menstrual cycle, especially those with premenstrual dysphoric disorder (Becker et al. 2017). There may be an effect of increasing alcohol intake in younger women caused by women being older at childbearing (Slade et al. 2016), such that they have less restrictions on their drinking behaviour.

Low levels of drinking during pregnancy is still a contested area, with some studies suggesting there is little long term effect on the child, whilst others are suggesting abstinence (Mamluk et al. 2017; McCormack et al. 2018). Heavy drinking through a pregnancy increases the risk of serious health effects that comprise the fetal alcohol

spectrum disorder (FASD). Children with FASD can have growth deficiencies, facial and other disfigurement, cognitive delay, and often significant behavioural problems, with girls having more disfigurement and neuro cognitive impairment. Affected boys are less likely to survive to start school (May et al. 2017). There is a recognition that advice on cutting out alcohol completely during pregnancy is unlikely to be effective, with many women continuing to drink despite the warnings (Gupta et al. 2016).

Case study 8 Bee

Women's Health Matters "Breathing Space" is a domestic violence project offering input to support "stabilisation", and increase understanding of abusive relationships and preventative strategies

Bee¹ self-referred to Breathing Space Project. Previously 4 of Bee's children had been adopted due to abusive relationships and her consequent problematic drug use. At the point of referral she had a baby and was pregnant. She had Children's Social Care Service involvement, Family Drug and Alcohol Court involvement, and was in a foster placement, being monitored to ensure she didn't relapse or have contact with the abusive ex-partner.

At times Bee didn't feel heard or fully acknowledged for the changes she was making. Breathing Space provided Bee with a place where she could talk things through from her own perspective and gain support to maintain sobriety. On several occasions Bee told us that in the past she would have self-sabotaged and used drink or drugs again as a reaction to the stress of the assessment.

Bee says "If it hadn't have been for Breathing Space opening my eyes to the different types of abuse there are I probably wouldn't have cut contact with my ex and I wouldn't have been allowed to keep my children if I'd stayed with him. It's put me in a different headspace because it's about wellbeing as well as domestic abuse. I have made a lot of progress since I've been at Breathing Space."

Bee has recently been told that she is allowed home with her child and will be allowed full custody of her baby once it is born.

¹Name changed

For post-menopausal women, ageing can mean psychological distress as a consequence of social impairment, fatigue, physical ill-health, depression, loss of loved ones, and a general feeling of loss, which can all add to the need for alcohol (Milic et al. 2018b). Unfortunately, with the menopause the impact of alcohol use disorder becomes more severe with both physical and emotional health

consequences (Milic et al. 2018b). Post-menopausal women are also more likely to find it more difficult to recover from dependency in their older years than for men (Milic et al. 2018b), due to the social stigma they experience and difficulty in accessing services.

Lesbian alcohol use is significantly higher than the general population and is higher than bisexual women (Shahab et al. 2017). In part this is due to perceived sexual minority discrimination and stress, and is aggravated when linked to low socio-economic status and social isolation (Lewis et al. 2016). This same study also found that race was a factor, with White lesbian women more likely to drink to cope than Black participants. Treatment aimed at lesbian, bisexual and queer women should ensure that identity is acknowledged and services framed accordingly (Pennay et al. 2018).

Ethnicity can also be an issue with regard to both alcohol risk and also rehabilitation, with Sikh women with drinking problems resisting seeking help due to the fear of stigma and shame (Gill 2017).

Leeds has developed a robust strategy (Leeds City Council 2014) to help combat the problem of alcohol and drug abuse within the city. It sets out the priority action points, which includes greater work within schools and more outreach activity into communities most at risk. It is focused onto four key outcomes:

- People choose not to misuse drugs and / or alcohol.
- More people to recover from drug and alcohol misuse.
- Fewer children, young people and families are affected by drug and alcohol misuse.
- Fewer people experience crime and disorder related to the misuse of drugs and alcohol.

There is a new Drug and Alcohol Strategy and Action Plan currently being written. Working groups for each of the four overarching outcomes have been developing it and is likely to be published April 2019.

11.4 Drugs and substance abuse

The death rate as a result of drug misuse has been fairly steady since 2001, but there has been an increase over the last 6 years in both women and men, with Leeds rates approximately 40% higher for women and 50% higher for men compared to the data for England (ONS 2017p) (Figure 6).

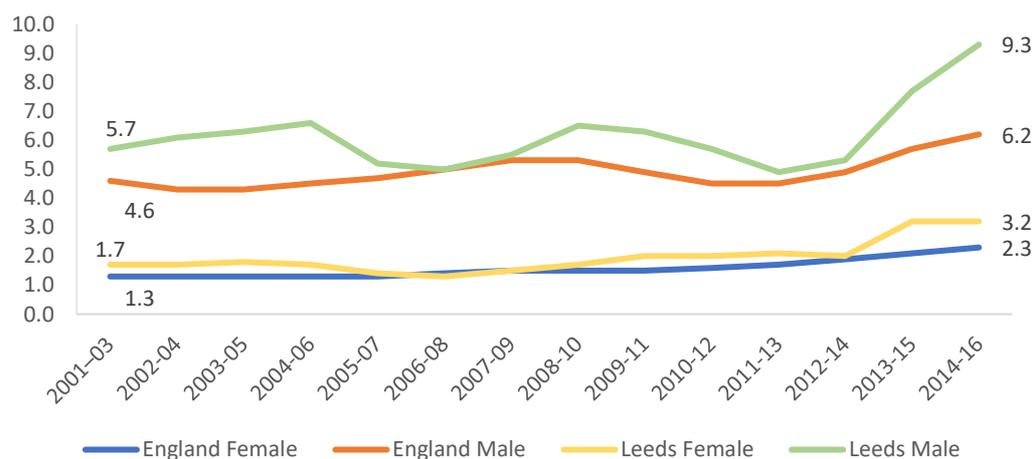


Figure 6 Age-standardised mortality rate for deaths related to drug misuse, by sex, England and Leeds, 2001 and 2016

The 'My Health, My School' survey data (Leeds City Council 2018a) asked high school children in Leeds about their use of illegal drugs and found that it was more of a problem for boys, with usage increasing with age (Figure 7).

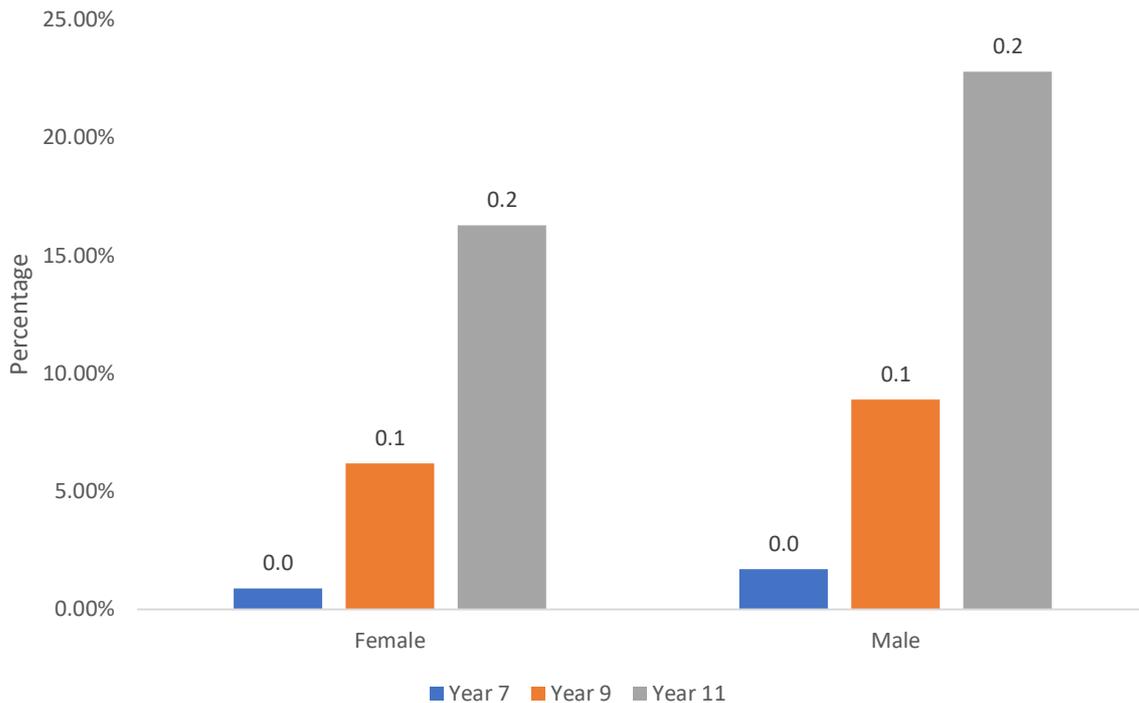


Figure 7 Used Illegal Drugs, 3 Year Rates by Sex and Year Group (2015/16 to 2017/18)

There are important sex and gender differences between men and women with regard to substance abuse and response to treatment and rehabilitation (Greenfield et al. 2010; Becker et al. 2017). Women can find themselves addicted with lower levels of drugs taking and over a shorter time frame than when addiction occurs with men (Greenfield et al. 2010). Childhood adversity generally has more of an effect on male vulnerability to substance abuse, but if that abuse is persistent and on-going then women's risk grows to surpass the levels of alcohol, drug and polysubstance abuse seen in men (Evans et al. 2017).

Biological research has been limited on women, but the studies that have included women in structural neuroimaging studies have found significant sex effects on pathophysiology (Lind et al. 2017). This could be the result of sex hormones or menstrual cycle, endophenotypes that predate disease, neurobehavioral mechanisms associated with socialized gender roles, co-morbidities, or stress responses known to differ in women compared to men [p97].

Sexual minority women are at greater risk of substance abuse as compared to heterosexual women (Feinstein et al. 2017) mostly as a result of heightened risk of

sexual abuse and trauma leading to post traumatic stress disorder (PTSD) (Dworkin et al. 2017).

Drug dependency is both a route into sex work, and also a cause of over 64% of Leeds' street working prostitutes staying in sex work due to the need for money to fuel their addiction (Martin 2017).

A study on women with learning disabilities with substance abuse (Slayter 2016) found that they were an under-researched group, but they were less likely to receive treatment than men with learning disabilities or than other women, suggesting both a gender and disabilities discrimination.

11.5 Gambling

According to the 2018 Gambling Commission survey, excluding the national lottery, 38% of women have gambled in the previous year (46% of men) (Conolly et al. 2018). Men are more likely to be classified as low risk and moderate risk gamblers (low risk - 3.9% men, 1.1% women; moderate risk 1.9% men, 0.4% women). Men are also more likely than women to be classified as problem gamblers (1.0% and 0.2% respectively). Age is an important factor, with women aged 25-34 more likely to be low risk gamblers, women aged 35-44 at greatest risk of being a moderate gambler, with the risk of problem gambling being similar at all ages under 65 years of age, then increasing for those aged over 75 years (Conolly et al. 2018).

A study undertaken by Leeds Beckett University (Kenyon et al. 2016a) and funded by Leeds City Council has estimated that there are 40,000 people at risk of gambling-related harms in Leeds, with 10,000 'problem gamblers'. Problem gambling is gambling to a degree that compromises, disrupts or damages family, personal or recreational pursuits (Lesieur and Rosenthal 1991). Unfortunately, the Leeds Beckett study did not give a breakdown of data by gender. However, as problem gambling impacts on around 6 to 10 individuals close to the problem gambler, it is also worth noting that many women will be on the receiving end of the negative consequences of gambling. They will be affected by harm to relationships, resources (such as

money and debt) or health (including psychological distress and physical health risks) - and a combination of all three (Wardle et al. 2018).

Interestingly there is a strong link between women who have gambling disorder and compulsive buying behaviour (Díez et al. 2018) and the treatment approaches should take into account gender-related factors.

It is very telling that 23% of female prisoners (37% male prisoners) were identified as at-risk gamblers prior to their prison sentence. The female prison population generally are more vulnerable than the general population to problem and pathological gambling (GamCare 2018), with a strong link to pre-existing mental health problems (Mestre-Bach et al. 2018). There is a need to have recognition of how vulnerable these women can be:

“ Lastly, from an ethical standpoint, it is crucial that public policy be accompanied by an effort to minimize the risk of stigmatization, especially since it is dealing with a particularly vulnerable population – both as a result of the particular risk-factors highlighted in this article and of other well-known gender-sensitive variables associated with wrongful discrimination against women” p128 (Mestre-Bach et al. 2018).

The feeling of stigma associated with gambling is a barrier to both men and women seeking help, however an Australian study (Baxter et al. 2016) found that there were gendered differences in the cause of the stigma. Both men and women felt shame about their financial difficulties, but men were more greatly affected by the feelings of embarrassment from being addicted and the need to gamble to cope and the sense of failure. For women their stigma was more focused onto admitting that they were seduced by the ‘bells and whistles’ of the gambling venue where they felt important, their denial of their addiction; their belief in luck and that the casino can be beat; and the shame of being dishonest – these were all perceived as barriers to help-seeking.

11.6 Obesity/Overweight

Obesity is recognised as a major public health problem, with significant consequences including poor emotional and physical health and a risk of premature death (North Yorkshire County Council 2016). For women, there is the added burden that obesity can have a negative effect on their chances of childbirth and on the health of their offspring, both in the short- and longer-term.

Women tend to lay down fat in their hips and thighs (gynoid fat distribution) as compared to men who tend to deposit fat within their abdomen (android); this results in the female pear shape and the men's apple shape when overweight (Tchernof and Després 2013). This form of fat for women is relatively inert and does not lead to health problems, and here is evidence that a higher body mass index is actually good for women, helping to develop stronger bones (Salamat et al. 2016) and is protective during pregnancy and post-menopause. It is only when the fat is deposited abdominally that it becomes much more dangerous to women, with visceral fat being a major cause of type II diabetes and increases the risk of cardiovascular disease and premature death (Tchernof and Després 2013; Song et al. 2014; Elffers et al. 2017; Wu et al. 2018) and the fat-related cancers (Kapoor et al. 2017a, b).

Overweight and particularly very overweight is of great concern in very young children. The School Health Survey for Leeds (Leeds City Council 2018a) five-year rate data (2012/13 to 2016/17) shows that 8.5% of reception-aged girls are overweight compared to 9.2% of boys, and by year 6, this has increased to 18.1% of girls and 21.0% of boys. Again, this varies across the city, with some areas of Leeds seeing over a quarter of female reception class children either overweight or very overweight, including Beeston Millshaw, Elland Road and Cottingley (28.6%), Halton Moor, Wykebecks (28.4%), and Cross Green, East End Park and Richmond Hill (28.0%). For girls in year 6 there was a range of 14.2% in Roundhay to 43.9% in Gipton North. Girls of reception age classed as 'very overweight' ranged from 2.4% in Arthington to 14.5% in Little Woodhouse. In year 6 overweight was higher with a range of 0.0% in City Centre to 30.9% in Gipton North.

In the Leeds Women's Voices study (Thomas and Warwick-Booth 2018), there was concern over the availability of cheap unhealthy food, which was recognised to be a

factor in poor diets and the likelihood of becoming unhealthy. As one of the respondents noted:

“...cheap foods, there’s a lot of cheap food which is really unhealthy food and it’s about educating people really. I suppose also it’s with regards the suppliers. You know, two pieces of chicken and chips for 99p...That’s what, the way we want people to go don’t we to eat healthy but, it’s the price. So, that’s what I find it’s what people can afford.”

There are significant health consequences for girls and young women with obesity, including earlier sexual maturation, reproductive dysfunction, infertility, contraceptive failure and a range of diverse obstetric, perinatal, and neonatal complications, such as spontaneous abortion and congenital abnormalities (Catalano and Shankar 2017; Elizondo-Montemayor et al. 2017). Obese women have higher risks of developing gestational diabetes, venous thromboembolism, depression and difficulty with breast feeding (Catalano and Shankar 2017) and obesity in post-menopausal women is a risk factor for chronic liver disease (Trembling et al. 2017).

Being obese pre-pregnancy also has long term implications for the offspring, as a result of the mother’s high fat content leading to changes to the child’s genetic structure. This can result in a higher risk in their children becoming obese themselves and having a shorter lifespan (Ojha et al. 2013; Reynolds et al. 2013; Catalano and Shankar 2017).

Across England 27% of women and 26% of men are classified as obese, with 4% of women and 2% men morbidly obese (Conolly and Saunders 2017). It is estimated that by 2050 obesity is predicted to affect 60% of adult men, 50% of adult women and 25% of children across England (North Yorkshire County Council 2016).

In Leeds, prevalence of adult obesity ranges from 7.1% of the female population in the City Centre to over 30% of the female population in other areas, including Swarcliffe (35.5%), Middleton and Westwoods (34.7%) and Belle Isle North (34.0%).

There is a counter-intuitive link between poverty and overweight and obesity, with women (but not men) living in poorer socio-economic circumstances more likely to be obese (Conolly and Saunders 2017). It has been suggested that food insecurity is

linked to mothers risk of being obese as they are more likely to consume high-calorie but nutritionally-poor food to avoid feelings of hunger, especially in single mothers (Martin and Lippert 2012). The recession has also led to more women being obese (Jofre-Bonet et al. 2018). Poverty can also impact on the emphasis placed on health promotion and positive health interventions, such as weight loss as they are competing with a different set of everyday priorities (Audet et al. 2017). There is also a link between lower educational attainment and overweight (Wells et al. 2012), which is much stronger in women than in men, mostly as a result of poorer quality meals, early life under-nutrition, adversity and stress.

Managing weight for health is a major problem for people with learning disabilities, with 45% of women compared to 27% of women without a learning disability being classified as obese (PHE 2017c). The key causes are high levels of sedentary behaviour (Harris et al. 2018) and a greater risk of poorly balanced diets and having insufficient physical activity (Hallawell et al. 2012; PHE 2017d). Conversely, being underweight is twice as common in people aged over 64 with learning disabilities, compared with patients with no learning disabilities.

11.6.1 Psycho-social implications of overweight and obesity

Weight is a very contentious issue for women, with women and girls facing a double dilemma with regard to their weight, with a long-standing socio-cultural pressure to be thin and the impact of the obesogenic society.

The Health Survey for England for 2016 reveals that more normal weight women (13% vs 5% male) see themselves as too heavy, and only 4% of obese women thought they were the right weight as compared to 13% of men (Figure 8) (NHS Digital 2017d). This effect is also seen in school-aged girls and boys, where normal weight girls tend to see themselves as overweight, whilst normal-weight boys see themselves as underweight (Frisco et al. 2010).

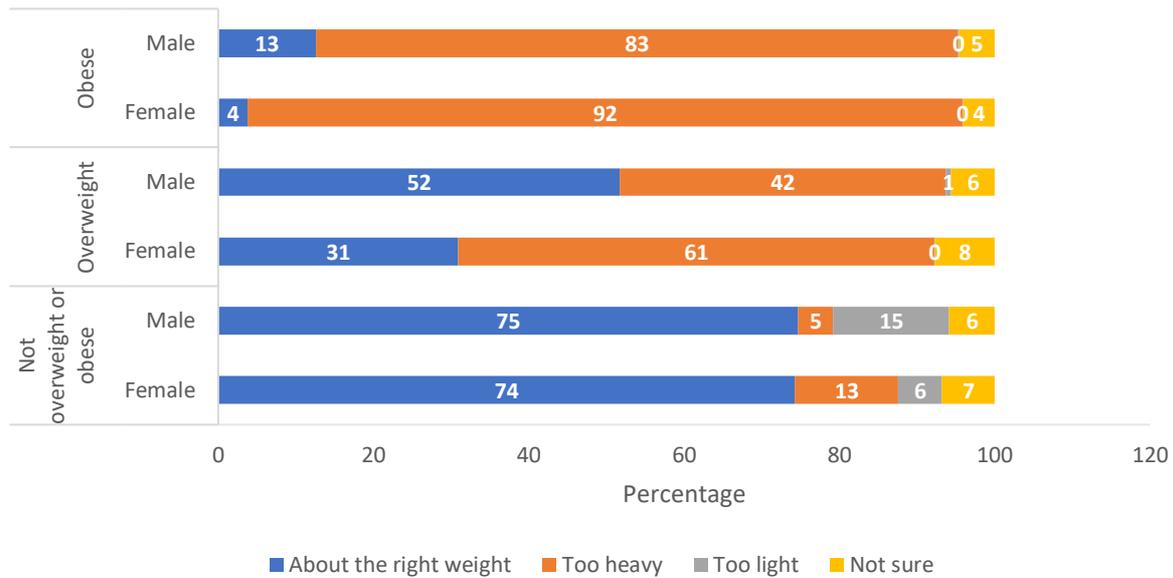


Figure 8 Perception of own weight, by BMI category and sex, England, 2016

For obese women there is a much lower opportunity for employment and to prosper within an organisation, in a way that weight is not as much of a barrier for men (Caliendo and Gehrsitz 2016; Nickson et al. 2016; Hiilamo et al. 2017). In part, this is due to the way overweight men and women are perceived, with the wider social stigma overweight and obese women face within society being reflected in the prejudices experienced in the workplace. Even for women who are slightly overweight there might be repercussions, especially where physical appearance and beauty are seen to be the important parameters (Caliendo and Gehrsitz 2016).

Overweight school girls can find themselves stigmatized and ostracised, and the victim of fat-shaming, especially when linked with social media. The way the girl views her body can have a marked effect on her self-esteem and self-confidence, with childhood obesity resulting in a greater level of psychological distress through into their adolescence and adulthood, and girls being more affected than boys (Gibson et al. 2017). Pressure on girls to be thin can lead to further eating difficulties including eating disorders such as Anorexia Nervosa and Anorexia Bulimia and other depressive symptoms (Frisco et al. 2010). Conversely, calorie dense comfort food has been found to be more likely to be used as a coping mechanism by women, (Tomiyaama et al. 2011).

There is a higher prevalence in obesity amongst lesbian women with the suggestion that there should be culturally tailored components into an obesity intervention for lesbian women (Mason and Lewis 2014; Mereish 2014; Haynes 2016).

11.7 Underweight

Approximately 2% of the female population of England is classed as underweight – [BMI <18.5kg/m²] - the same proportion as for males (NHS Digital 2017d). In Leeds, there are 41,503 females (37,775 males) over the age of 15 years identified as underweight. Underweight has been linked to eating disorders, but also to other disease processes, such as depression; cancer; digestive tract problems and cardiovascular disease; and to food poverty. In the elderly, it can be an indication of an inability to self-care or other health problems, such as heart disease, cancer or depression; and poses a greater health risk than being overweight (Lorem et al. 2017).

Being underweight has its own risks, especially when linked to other health problems or lifestyle risks (such as smoking), including a higher risk of premature death. Low BMI has a negative effect on female hormones with amenorrhoea and increases the risk of premature menopause (Szegda et al. 2017; Zhu et al. 2018b). There is also an increased risk of maternal mortality, delivery complications, preterm birth, and intrauterine growth retardation (Girsén et al. 2016; Abarca-Gómez et al. 2017).

Low BMI can also impact on healthy bone growth, which can lead to osteopenia in later life (Tatsumi et al. 2016). Recovery from major illness can be affected by being underweight, with an increased risk of death following an acute myocardial infarction (Buchholz et al. 2016).

11.8 Physical activity and sedentary behaviour

In the Women's Voices study (Thomas and Warwick-Booth 2018) there was an acknowledgment that Leeds is fortunate in having a lot of green spaces that can be used for free physical activity. Nevertheless, despite this apparent opportunity

women have lower activity levels than men, and deprived women have the lowest activity levels of all. It is important to note that there are health consequences of having a low level of physical activity (i.e. exercise) and also high levels of sedentary behaviour (i.e. sitting).

Sedentary behaviour is a significant cause of ill-health, both physical and mental (Dogra et al. 2017) and women who had the most sedentary lives were found to be at an increased risk of all-cause mortality, irrespective of other health concerns (Seguin et al. 2014). Prolonged sitting time has been found to be predictive of cardiovascular disease, irrespective of leisure-time physical activity in post-menopausal women (Chomistek et al. 2013) and has a negative effect on bone health (Braun et al. 2015), especially in younger women. Decreasing the amount of time sedentary has a more positive effect than increasing physical activity in older women (Braun et al. 2015, 2017).

As of July 2018, Leeds GP audit data for physical activity levels (measured using the GP Physical Activity Questionnaire) showed that of those females measured, only 41% were classed as 'active' or moderately active, with 42.2% classed as 'inactive' and 16.9% classed as 'moderately inactive'.

There are strong links between the levels of activity and inactivity between those living in deprived areas and the non-deprived areas (Figure 9), with 67,689 inactive female residents in the deprived areas as compared to 53,208 non-deprived females. However, both these levels are far higher than for males.

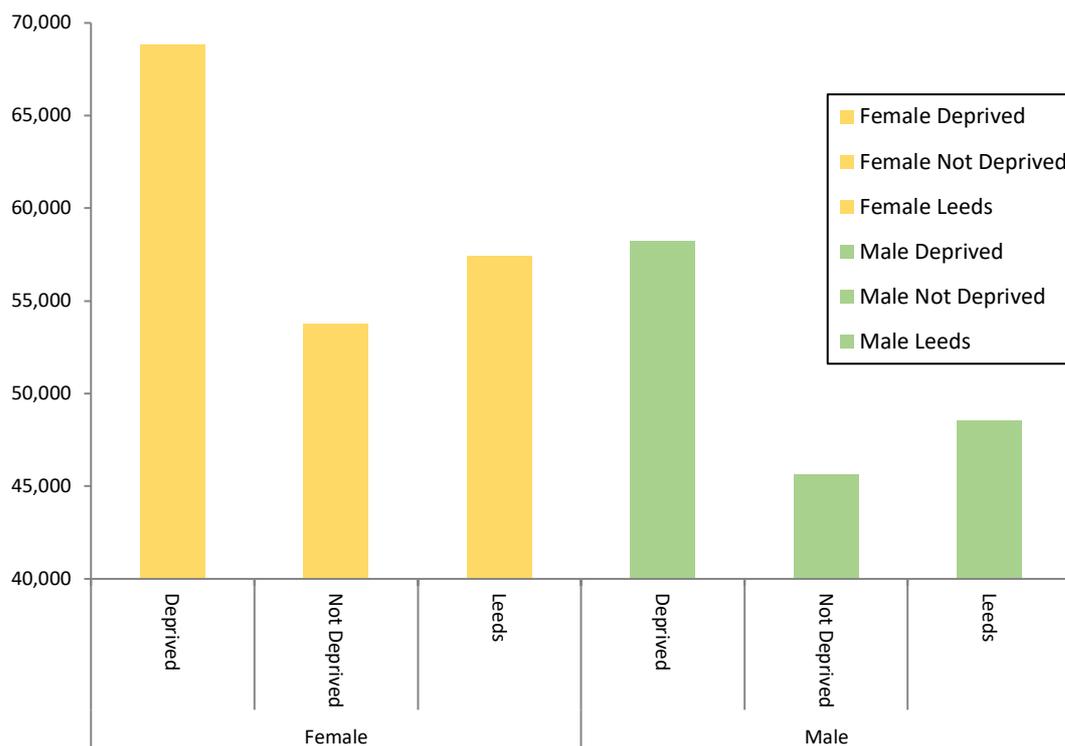


Figure 9 Combined Inactivity Status Rates by Sex and Deprivation, Leeds, 2018. GP Physical Activity Survey

Sedentary behaviour has been found to be greater in deprived neighbourhoods, but only by 15%, with positive perceptions of neighbourhood quality and high levels of neighbourhood social networks associated with decreased sedentary behaviour. Interestingly higher levels of social networks was associated with reduced sedentary time in men, but increased in women (Watts et al. 2017).

The health benefits of being physically active are many and include both short and long term effects, but it remains the case that girls and women are less likely to meet the national guidelines (Sport England 2018a). Getting girls and women engaged in activities is very important as there is increasing evidence that being physical active has both a preventative function on reducing the risk of developing cardiovascular disease (Chomistek et al. 2013), breast and colorectal cancer (Loprinzi et al. 2012a; Kerr et al. 2017), and osteoporosis (Chastin et al. 2014). There is also evidence that increasing physical activity has a positive effect on those women with health problems, with improved recovery, reduced risk of recurrence and decreased risk of death (Loprinzi et al. 2012b, 2013; Ballard-Barbash et al. 2012; Gonçalves et al. 2014). Strength and balance exercise programmes can be very therapeutic in

preventing falls in the elderly (NICE 2015a). Reducing sedentary behaviour during pregnancy, can have a positive impact on both mother and child (Fazzi et al. 2017).

The Women's Voices study (Thomas and Warwick-Booth 2018) found three specific issues with regard to women's barriers to being more active in Leeds:

- Expensive public transport was identified as a barrier to women accessing green spaces.
- Dogs (fear of) were identified as a reason why some women don't use green spaces (particularly BME women)
- Lack of access to groups (free or low cost) when not wanting to exercise alone.

"...and one of the things that lifts my spirits and makes me feel healthier is going to the park or being by water or getting out into the countryside that has a massive impact on me and I think when that's- then that's made really tricky for a lot of people isn't it [in reference to the cost of public transport]."

Why women are not more active has been explored widely, with 'a fear of being judged' being identified as a key barrier (Sport England 2015a). There is an historical issue in the way that physical education is provided within schools that has had a detrimental effect on the way many girls view sport, with embarrassment, pressure to succeed, or a self-perceived lack of ability in PE lessons coupled with other competing obligations being key factors for girls dropping out. The encouragement from teachers for girls to overcome the stereotype that sport is a 'manly' thing to do is a very important motivator (Wetton et al. 2013). Craike et al. (2009) also found that Year 11 students made a shift from competitive sport being for fun towards physical activity as a way of avoiding putting on too much weight, managing anger and finding relief from schoolwork.

The Women's Sports Foundation, (Women's Sport Foundation 2016) found those women who were previously active drop out of sport due to:

- Lack of access to the kinds of sports they want to do.
- Safety and transportation issues in getting to and from sports facilities.
- Social stigma of being associated with sport that has a 'gay' stereotype.

- Decreased quality of the experience, with more facilities and money associated with boys' sports and a greater sense of injustice.
- Cost of providing their own specialist coaching, equipment and travel.
- Lack of positive female role models in sport.

Ethnicity has been identified as potential barrier for women engaging in sport and physical activity. South Asian women may need to engage in more exercise than that advised to the White population due to having a different cardio-metabolic risk than white Europeans (Iliodromiti et al. 2016). They are also at greater risk of disordered glucose metabolism, leading to an increased risk of diabetes at a higher level of physical activity and lower levels of sedentary behaviour than western populations (Waidyatilaka et al. 2013). Despite this need, women from Asian backgrounds are the least likely to engage in sporting activities (Sport England 2017).

A worrying finding from the Women's Voices in Leeds study (Thomas and Warwick-Booth 2018) was that "some BME participants felt that provision for physical activity is targeted to and dominated by a white middle-class demographic e.g. charity runs cater for white middle-class elite runners. One participant described how she didn't feel welcome and many of her friends reported the same" (p28).

There has been some useful research done on South Asian girls to identify how they perceive sport and physical education in Yorkshire. The Leeds Research Insight report on increasing rates of South Asian girls engaging in physical activity (Leeds City Council 2017c) found that South Asian girls levels of activity (41.2%) were lower than for any other ethnic group. The report made a number of recommendations, which included raising awareness of why physical activity is so important; making culturally appropriate clothing permissible; increasing after school activities and involving the local Mosques, cultural leaders and community groups. They also recommend that Asian women should become the leaders and role models for the younger girls. A further study (Stride 2014, 2016; Stride and Flintoff 2016) suggests that the girls have very similar aspirations as the White population, however although they may experience different challenges, these can be overcome by schools listening to their concerns and being more adaptable.

Schools are recognising the important of sport and physical activity for girls, with a new endeavour to sell it as beneficial for health. This has helped some girls to take a wider look at what activities they would like to do (Walseth et al. 2017), but it can create problems for those girls who could not, or did not wish to engage, leading to additional levels of guilt and discrimination. As noted, however, by Clark (2018) “‘Health’ as an enactment of successful girlhood thus seems to set up winners and losers since it is unequally attainable to different girls.” (p490)

‘This Girl Can’ is a national campaign run through Sport England to get more girls and women engaged in sport and physical activity - there is a growth in women taking part in physical activities across the country (Sport England 2016) and Leeds is no exception. Park Runs, swimming, cycling, and an increase in High Intensity Interval Training (HIIT) have all seen increases over the last decade, however, this increase in participation tends to be within the more affluent areas of the city, with women from more deprived areas being less represented, reflecting the national picture (Sport England 2018b). This requires greater attention to attracting women who are currently considered to be ‘hard-to-reach’ (or unreached), such as those facing socio-economic disadvantage or from the ethnic minorities (Brook et al. 2017). There is also an issue with a ‘forgotten age’ of 25-60 years, with most focus being on school-age girls and the transition to adulthood, and then older women over 60 years (Stride et al. 2018).

According to Sport England’s insight report (Sport England 2015b) into women and sport there are 7 key principles to follow:

- Change the offer to suit the women you are targeting – don’t expect women to change to fit sport and exercise.
- Don’t just talk about ‘sport’ – for many women, sport has baggage.
- Differentiate sport and exercise from other interests by promoting (not preaching) the additional benefits – sell what your audience is asking for.
- Seeing is believing. Making sport the ‘norm’ for women relies on local women of all ages, sizes and faiths not only becoming active but celebrating it and encouraging others to join in.

- Use positivity and encouragement to drive action – stimulating action through fear of consequences will have little traction.
- Make it easy for women to act: right time, right place, right welcome, right company, right gear.
- People make or break the experience – ensure your audience are appropriately supported along the way.

The use of smart phone exercise tracking technology has been suggested as a way of increasing levels of activity, but it is not favoured by all women and tends to be avoided by those who see it as creating unnecessary competition and introducing the idea of hierarchy (Copelton 2010). There has been some evidence that it does not increase physical activity, but can act as a motivational factor for women to prevent stopping activity (Farnell and Barkley 2017). Such technology may also be a more effective in the younger generation (Toscos and Faber 2006).

It is important to remember that at the other end of the extreme there is a health risk of the Female Athlete Triad. This is a syndrome that comprises eating disorders, irregular or absent menstrual cycles and osteoporosis (Nguyen et al. 2014; De Souza et al. 2017) and is due to prolonged periods of physical activity and restricted diet as women try to reduce body weight as they train. This creates hormonal imbalance and the reduction of calcium in the diet causing a decrease in bone density. This can also occur in dancers and other activities that stress leanness and aesthetics coupled with heavy training regimens. Often sufferers are only picked up after repeated stress fractures and there needs to be greater awareness of the risk in young females.

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