Health and health-related behaviours of Lesbian, Gay and Bisexual adults

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This report compares statistics on health and health-related behaviours between Lesbian, Gay or Bisexual (LGB) and heterosexual adults between 2011 and 2018. Differences by age, ethnicity and sex are also considered.

Key findings

- The prevalence of limiting longstanding illness was higher among LGB adults (26%) compared with heterosexual adults (22%).
- A lower proportion of LGB adults were overweight or obese (51%) than heterosexual adults (63%).
- LGB adults had lower average mental well-being scores on the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) (48.9) compared with heterosexual adults (51.4), with LGB women reporting the lowest well-being scores (47.3).

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This report may be of interest to members of the public, policy officials, people working in public health and to commissioners of health and care services to see the prevalence of LGB health inequalities among adults in England.

Introduction

This report presents findings on health outcomes and health-related behaviours of the Lesbian, Gay and Bisexual (LGB) population in England.[1] These are analysed by age, sex and ethnicity. The data are based on a representative sample of adults, aged 16 and over, who participated in the Health Survey for England (HSE) from 2011–2018. A survey question about sexual orientation was first included in HSE in 2011. HSE does not include a question about gender identity or trans status, therefore it is not possible to present findings on trans and non-binary adults' health outcomes and health-related behaviours. This is currently being considered for future HSE survey years.

In 2019, an estimated 1.4 million people in the UK aged 16 years and over (2.7% of the population) identified as LGB.[2] The Government Equalities Office's 2018 LGBT survey found that a proportion of Lesbian, Gay, Bisexual and Trans (LGBT) people indicated issues with access to healthcare services, and some reported avoiding treatment for fear of discrimination or intolerant reactions.[3] This report is the first to present nationally representative data on the health of LGB adults in England.

This report presents key findings only and does not present interpretation or analysis of the data. Detailed Excel tables accompanying this report can be accessed via the link on http://digital.nhs.uk/pubs/HSE-LGB

Background

Existing evidence shows that some health outcomes are worse for LGBT people. The LGBT Foundation published a report showing inequalities faced by LGBT people throughout their lives: one in six LGBT people reported drinking almost every day in the last year in 2017, compared to one in 10 adults in the general population; 52% of LGBT people reported experiencing depression (compared to 20% of the UK population reporting symptoms of anxiety or depression according to a 2016 ONS national wellbeing survey[4]); 55% of LGBT

1 Here and elsewhere in the report, analysis of this group is limited to those who identified as Lesbian, Gay or Bisexual. Those who answered "Other" or "Prefer not to say" were not included in the analyses.

2 Office for National Statistics. *Sexual orientation, UK: 2019: Experimental statistics on sexual orientation in the UK in 2019 by region, sex, age, marital status, ethnicity and socio-economic classification, using data from the Annual Population Survey (APS). ONS*, 2021. https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/sexuality/bulletins/sexualidentityuk/2019

3 Government Equalities Office. *National LGBT Survey Research Report*. Government Equalities Office, 2018. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/721704/LGBT-survey-research-report.pdf

4 Evans J, Macrory I, & Randall C. *Measuring national wellbeing: Life in the UK.* ONS, 2016. https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/measuringnationalwellbeing/2016#how-good-is-our-health

men were not active enough to maintain good health, compared to 33% of men in the general population.[5,6] Previous research has also consistently shown higher rates of smoking and alcohol consumption,[7] and poorer mental health,[8] in the LGBT community. The GP Patient Survey (2020) found that LGB people were more likely to report a long term mental health condition, to have problems with physical mobility, and be living with frailty.[9]

An evidence review by the National Institute of Economic and Social Research (2016) also found that dissatisfaction with health services is higher among LGB people, with contributing factors including experience of discrimination, invisibility of LGB people and lack of information on their health needs and lack of knowledge by health care staff on LGB health needs.[10]

In 2019, as part of the LGBT Action Plan,[11] the Government appointed a National Advisor to focus on reducing the health inequalities that LGBT people face and advise on ways to improve the care LGBT people receive when they access the NHS and public health services. The National Advisor advocates for the needs of LGBT people in the healthcare system and represents the voices of the LGBT community.

Additionally, in 2019, the Women and Equalities Select Committee (WESC) published its recommendations on health and social care and LGBT communities.[12] The recommendations emphasised the need for sexual orientation and gender identity monitoring with regard to health disparities across all NHS and state social care providers. The recommendation also included creation of LGBT-inclusive services and

5 LGBT Foundation. *Hidden figures: LGBT health inequalities in the UK*. LGBT Foundation, 2020. https://www.lgbt.foundation/downloads/hiddenfigures

6 Stonewall. *LGBT in Britain: Health report.* 2018. https://www.stonewall.org.uk/system/files/lgbt_in_britain_health.pdf

7 Shahab L, Brown J, Hagger-Johnson G, et al. *Sexual orientation identity and tobacco and hazardous alcohol use: findings from a cross-sectional English population survey*. BMJ Open 2017;7:e015058. https://bmjopen.bmj.com/content/7/10/e015058

8 McDermott E, Nelson R, Weeks H. *The Politics of LGBT+ Health Inequality: Conclusions from a UK Scoping Review.* Int J Environ Res Public Health2021;**18**:2:826 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7835774/#

9 NHS England. GP Patient Survey. NHS England, 2020. https://www.england.nhs.uk/statistics/2020/07/09/gp-patient-survey-2020/

10 Nathan Hudson-Sharp and Hilary Metcalf. *Inequality among lesbian, gay bisexual and transgender groups in the UK: A review of evidence*. NIESR, 2016. https://www.niesr.ac.uk/sites/default/files/publications/160719_REPORT_LGBT_evidence_review_NIESR_FINALPDF.pdf

11 Government Equalities Office. (2018). *LGBT Action Plan 2018: Improving the lives of Lesbian, Gay, Bisexual and Transgender people.* Government Equalities Office, 2018. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/721367/GEO-LGBT-Action-Plan.pdf

12 Women and Equalities Committee. *Health and social care and LGBT communities. House of Commons, Women and Equalities Committee, 2019.* https://publications.parliament.uk/pa/cm201919/cmselect/cmwomeq/94/94.pdf

improving staff training and regulation to adequately address LGBT needs.

Overview of the LGB participants in the HSE

A total of 58,226 adults (aged 16 and over) were interviewed in the Health Survey for England (HSE) surveys from 2011 to 2018. In the HSE surveys, sexual orientation has been asked as a question within the self-completion section: “Which of the following options best describes how you think of yourself?”. Participants had the option to select from the five following answer options: Heterosexual or Straight, Gay or Lesbian, Bisexual, Other, and Prefer not to say. This is a standard question recommended for surveys by the Office for National Statistics.[13]

Of all adults, 2% (1,132 adults) identified as lesbian, gay or bisexual. Another 2% (1,421 adults) identified as ‘Other’ or answered ‘Prefer not to say’ to the question on sexual orientation, and these adults were not included in the analyses due to potential difficulties with interpretation.

Data for HSE 2011–2018 was collected by face-to-face interviews with some self-completion questions. As part of each annual survey, all or most of the households were eligible for a nurse visit at which additional questions were asked and measurements taken. Not all eligible households agreed to a nurse visit, so there were fewer participants for whom information collected during the nurse visit was available.

The demographic characteristics by sexual orientation, age, sex, and ethnicity are presented in the following tables.

13 Office for National Statistics. *Measuring sexual identity: A guide for researchers*. ONS, 2009. https://webarchive.nationalarchives.gov.uk/20160106185802/http://www.ons.gov.uk/ons/guide-method/measuring-equality/equality/sexual-identity-project/index.html

Table A: Number of participants, by age group and sexual orientation

	Sexual orientation					
	Heterosexual or straight	Gay or lesbian	Bisexual	Other	Prefer not to say	Total
16-34	12,844	260	290	91	249	13,734
35-59	23,792	338	127	110	433	24,800
60+	19,037	78	39	105	433	19,692
Total	55,673	676	456	306	1,115	58,226
16-34	93.5%	1.9%	2.1%	0.7%	1.8%	100%
35-59	95.9%	1.4%	0.5%	0.4%	1.7%	100%
60+	96.7%	0.4%	0.2%	0.5%	2.2%	100%
Total	95.6%	1.2%	0.8%	0.5%	1.9%	100%

Table B: Number of participants, by sex and sexual orientation

	Sexual orientation					
	Hetero-sexual or straight	Gay or lesbian	Bisexual	Other	Prefer not to say	Total
Men	24,462	403	139	116	485	25,605
Women	31,211	273	317	190	630	32,621
Total	55,673	676	456	306	1,115	58,226
Men	95.5%	1.6%	0.5%	0.5%	1.9%	100.0%
Women	95.7%	0.8%	1.0%	0.6%	1.9%	100.0%
Total	95.6%	1.2%	0.8%	0.5%	1.9%	100.0%

Source: NHS Digital

Table C: Number of participants, by ethnicity and sexual orientation

	Sexual orientation					
	Hetero-sexual or straight	Gay or lesbian	Bisexual	Other	Prefer not to say	Total
White	49,986	644	400	224	755	52,009
Black	1,398	5	11	21	59	1,494
Asian	3,148	11	30	44	248	3,481
Mixed / multiple ethnic background	718	11	11	8	24	772
Any other ethnic group	385	5	4	8	16	418
Total	55,635	676	456	305	1,102	58,174
White	96.1%	1.2%	0.8%	0.4%	1.5%	100.0%
Black	93.6%	0.3%	0.7%	1.4%	3.9%	100.0%
Asian	90.4%	0.3%	0.9%	1.3%	7.1%	100.0%
Mixed / multiple ethnic background	93.0%	1.4%	1.4%	1.0%	3.1%	100.0%
Any other ethnic group	92.1%	1.2%	1.0%	1.9%	3.8%	100.0%
Total	95.6%	1.2%	0.8%	0.5%	1.9%	100.0%

Source: NHS Digital

Notes:

1. Some participants did not answer the ethnicity question, so totals for Table C vary from the totals in Table A and Table B.

Due to small numbers of LGB ethnic minority participants, this report used a binary ethnicity variable for analysis. ‘Any other ethnic group’ participants were excluded from the binary ethnicity variable. Ethnicity has not been included in the analysis of hypertension or of raised total cholesterol. These measures were taken in nurse visits and the number of participants was too low to provide accurate estimates by ethnicity.

The age profiles of heterosexual and LGB participants in the dataset were different. A small proportion of LGB participants were aged over 60, just 7% compared to 28% of heterosexual participants. Over half of LGB participants (56%) were aged 16-34, compared to 30% of heterosexual participants.

Table D: Age profile of participants by sexual orientation

	Sexual orientation	
	Heterosexual or straight	Lesbian/Gay/Bisexual
16-34	30%	56%
35-59	42%	37%
60+	28%	7%
Total	100%	100%

Source: NHS Digital

Notes:

1. Weighted figures were used for percentages in Table D so it may differ from Table A.

Main findings

A summary of the main findings can be found below.

Health

- A higher proportion of the LGB adults (7%) reported ‘bad’ or ‘very bad’ health compared with heterosexual adults (6%).
- A lower proportion of LGB adults were overweight or obese (51%) than heterosexual adults (63%).
- The prevalence of limiting longstanding illness was higher among LGB adults (26%) compared with heterosexual adults (22%).
- The prevalence of musculoskeletal conditions (including arthritis/rheumatism/fibrositis and back problems/slipped disc/spine/neck) was lower in LGB adults (13%) compared with heterosexual adults (16%).

Health-related behaviours

- LGB adults were more likely to drink at levels which put them at increased or higher risk of alcohol-related harm, that is, more than 14 units in the last week (32%), compared with heterosexual adults (24%).
- Among the white population, heterosexual and LGB white adults were equally likely to report that they drank no alcohol in the last week (35% and 33% respectively). Among those from an ethnic minority, heterosexual adults were more likely to report no alcohol consumption in the last week (71%) compared with LGB adults (55%).
- More LGB adults (27%) than heterosexual adults (18%) were current smokers. The proportion of adults who currently smoked cigarettes was highest among LGB women at 31% and lowest among heterosexual women at 16%.

Mental health and wellbeing

- LGB adults had lower average mental well-being scores on the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) (48.9) compared with heterosexual adults (51.4), with LGB women reporting the lowest well-being scores (47.3).
- 16% of LGB adults said they had a mental, behavioural or neurodevelopmental disorder as a longstanding condition. The proportion of heterosexual adults reporting the same was lower at 6%.[14]

14 For detailed information on longstanding condition categories, see: Moody A. *Health Survey for England, 2018: Longstanding conditions report*. NHS Digital, 2019. https://files.digital.nhs.uk/AA/E265E0/HSE18-Longstanding-Conditions-rep.pdf

Data analysis and reporting

About the survey estimates

The Health Survey for England, in common with other surveys, collects information from a sample of the population. The sample is designed to represent the whole population as accurately as possible within practical constraints, such as time and cost. Consequently, statistics based on the survey are estimates, rather than precise figures, and are subject to a margin of error, shown as a 95% confidence interval. For example, the survey estimate might be 24% with a 95% confidence interval of 22% to 26%. A different sample might have given a different estimate, but we expect that the true value of the statistic in the population would be within the range given by the 95% confidence interval in 95 cases out of 100.

Where differences are commented on in this report, these reflect the same degree of certainty that these differences are real, and not just within the margins of sampling error. These differences can be described as statistically significant.[15]

Self-reported data

The findings in this report are based on participants' reports of their behaviour. Adults aged 25 and over were asked about their smoking and drinking behaviour within the face-to-face interview. For those aged 16 to 17, information about smoking and drinking was collected through a self-completion questionnaire, to offer participants more privacy by allowing them to answer without disclosing their smoking or drinking behaviour to other household members. At the interviewer's discretion, those aged 18 to 24 could answer the smoking and drinking questions either through the face-to-face interview or through the self-completion questionnaire.

Rounding of estimates

Estimates presented in the text are rounded to the nearest whole number. Where categories are combined the sum of two estimates may sometimes appear to be greater or less than expected. This reflects the effect of rounding; for example, estimates of 10.6% and 12.7% would round respectively to 11% and 13%, but the sum (23.3%) will round to 23% rather than 24%. The charts are based on unrounded estimates. As a result, values given in the text may appear different in the corresponding chart. For example, an estimate of 10% in the text may represent a value between 9.5% and 10.4%, and it is the latter that would be reflected in the chart data points.

15 Statistical significance does not imply substantive importance; differences that are statistically significant are not necessarily meaningful or relevant.

Reporting age variables

The age groups used in this report are less granular than the age groups in the HSE 2019 report. When analysing differences by sexual orientation (that is, LGB compared with heterosexual), the age groups used are 16-34, 35-59 and 60+. When analysing differences by sex and sexual orientation (that is, LGB women, gay or bisexual men, heterosexual women, and heterosexual men), a broader age group was used: 16-49 and 50+. This was due to small sample sizes.

Testing for statistical significance

Significance testing was carried out on the results in this report. All significance testing was adjusted for age and therefore differences in the age profiles of the population identifying as heterosexual or LGB were taken into account in the commentary of this report.

The term ‘significant’ refers to statistical significance at the 95% level and is not intended to imply substantive importance. The significance tests were carried out to test the relationship between variables in a cross tabulation, usually an outcome variable nested within sexual orientation, cross-tabulated with an explanatory variable such as age (in categories) or ethnicity (in categories). The test was conducted for the main effects only (using a Wald test[16]), whilst adjusting for differences in age profiles. For example, the test might examine whether there is a statistically significant relationship between self-reported general health and sexual orientation overall (after controlling for age). It would not test for relationships between specific categories of self-reported general health and sexual orientation.

It is worth noting that the test does not establish whether there is a statistically significant difference between any particular pair of subgroups (e.g. the highest and lowest subgroups). Rather it seeks to establish whether the variation in the outcome between groups that is observed could have happened by chance or whether it is likely to reflect some 'real' differences in the population.

In addition to testing for the main effects, significance tests for interaction effects were also carried out. Interaction effect refers to a situation where the relationship between an outcome variable and an explanatory variable varies depending on a second explanatory variable. For example, a test was carried out to see whether the age differences in the proportion of participants with a longstanding health condition were the same among LGB and heterosexual adults.

16 The Wald test is a statistical test used to calculate the significance of parameters in a statistical model. The Wald test was used in analysis of HSE data in this report to establish whether the association among particular variables is statistically significant. The test calculates the statistical significance of parameters in a logistic regression model (for example, whether sex and sexual orientation are significantly associated with general health). Testing was at the 95% level and p values are included in the report with $p <= 0.05$ being statistically significant.

While we recognise that lesbian, gay and bisexual people are not a homogenous group and will have separate, distinct experiences, the sample size is too small to analyse the groups separately. For this report we have chosen to compare LGB with heterosexual people's experiences due to the known inequalities that exist for the LGB group, from prior research into LGBT communities. The findings from these tests are commented on in the report.

General health

Self-reported general health, by sexual orientation, sex and ethnicity

Self-reported general health was measured using one question asking participants to report how good their general health was on a scale from ‘very bad’ to ‘very good’.

A slightly larger proportion of the LGB adults reported ‘bad’ or ‘very bad’ health compared to the heterosexual adults (7% and 6% respectively) (sexual orientation: $p< 0.001$). As explained in the introduction to this report, survey estimates are subject to a margin of error. It is likely that the proportion of adults in the population who assessed their general health as ‘bad’ or ‘very bad’ was between 5.5% and 8.4% of LGB adults and between 6.1% and 6.6% of heterosexual adults. While the confidence intervals overlap, the difference is significant after controlling for age, that is allowing for different age profiles of LGB and heterosexual adults.

The proportions reporting ‘bad or ‘very bad’ health were similar among LGB men and women and heterosexual men and women (sex*sexual orientation: $p=0.121$).

The proportions reporting ‘bad’ or ‘very bad’ health were similar among LGB adults and heterosexual adults across white and ethnic minority groups (sexual orientation*ethnicity: $p=0.961$).

Table 1a, 1b

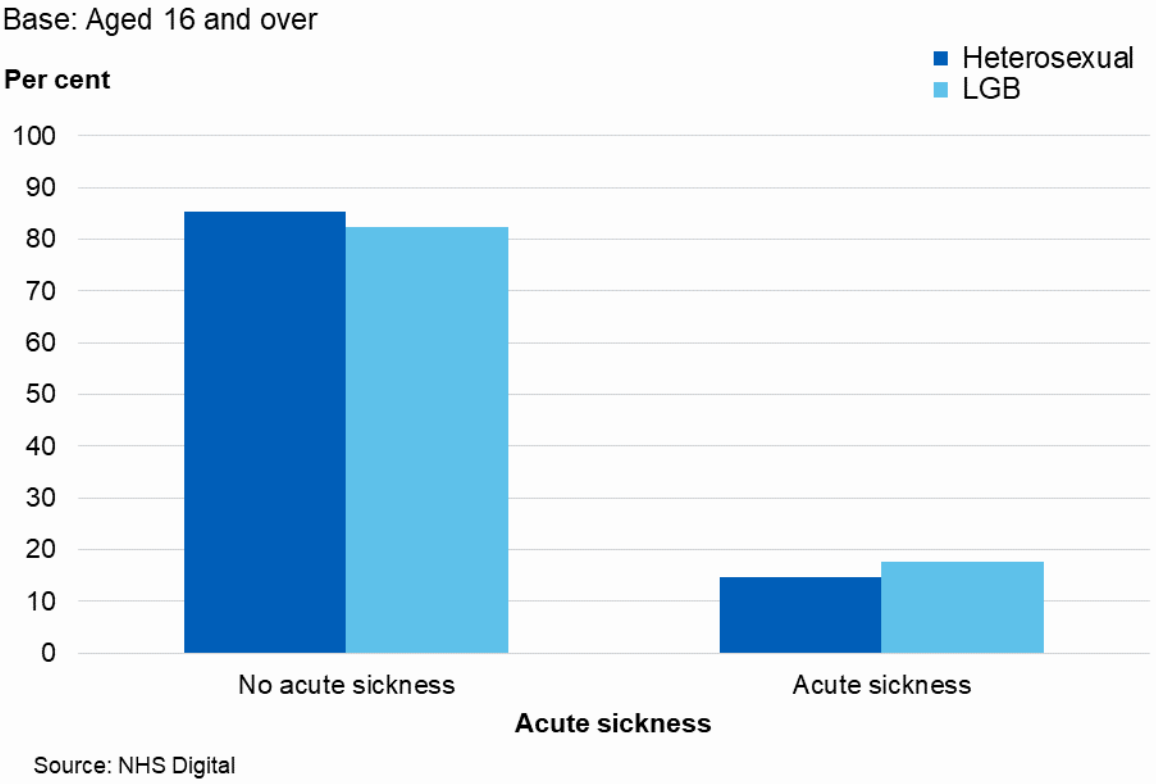
Acute sickness

Acute sickness, by sexual orientation, sex and ethnicity

Acute sickness is defined as any illness or injury (including any longstanding condition) that has caused the participant to cut down in the last two weeks on things they usually do. More LGB adults (18%) than heterosexual adults (15%) reported having any acute sickness in the last two weeks (sexual orientation: $p<0.001$). Taking into account the margin of error, it is likely that the proportion of adults in the population who reported having any sickness in the last two weeks was between 15.2% and 20.3% of LGB adults and between 14.2% and 15.0% of heterosexual adults.

Figure 1, Table 2a

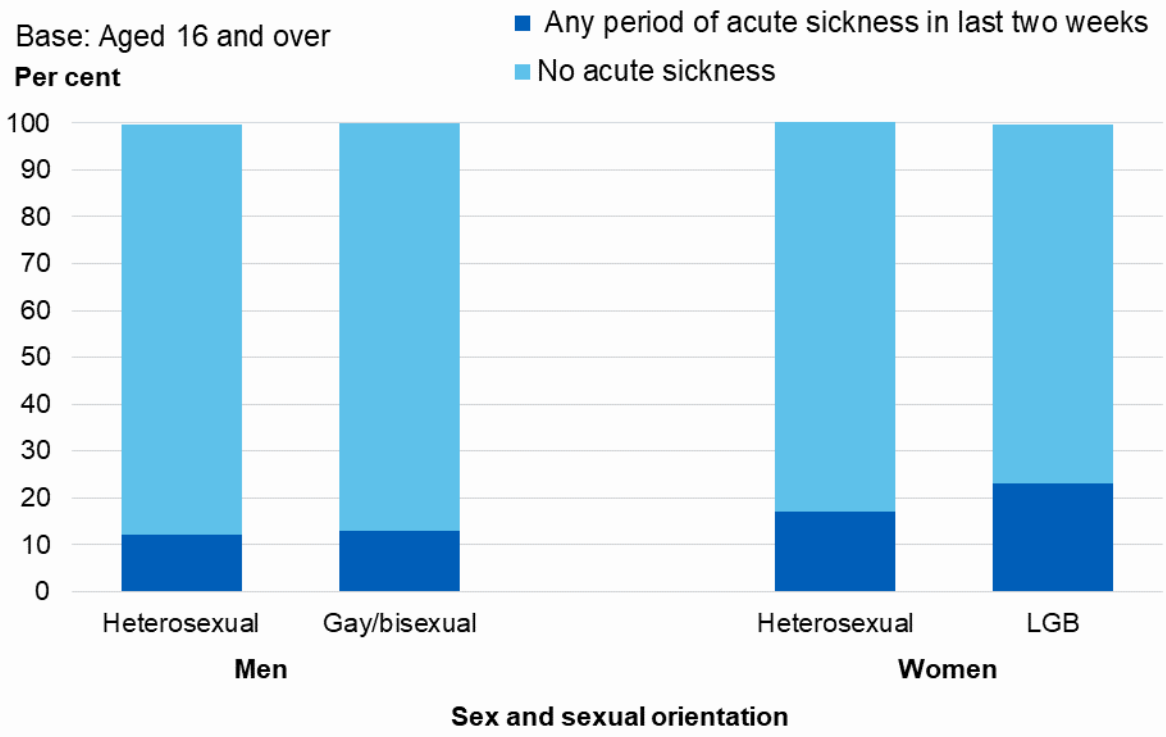
Figure 1: Acute sickness, by sexual orientation



The prevalence of any acute sickness in the last two weeks was higher among LGB women (23%) compared with heterosexual women (17%), gay or bisexual men (13%) and heterosexual men (12%) (sex*sexual orientation: p=0.017).

Figure 2, Table 2b

Figure 2: Acute sickness, by sexual orientation and sex



Source: NHS Digital

The pattern of differences between heterosexual and LGB adults reporting acute sickness was similar across white and ethnic minority groups (sexual orientation*ethnicity: p=0.682).

Table 2a

Longstanding illness

Longstanding illness, by sexual orientation, age and ethnicity

The question on longstanding illness asks about physical and mental health and refers to illnesses or conditions ‘lasting or expected to last 12 months or more’. A longstanding illness is defined as limiting if the participant reports that it reduces their ability to carry out day-to-day activities.

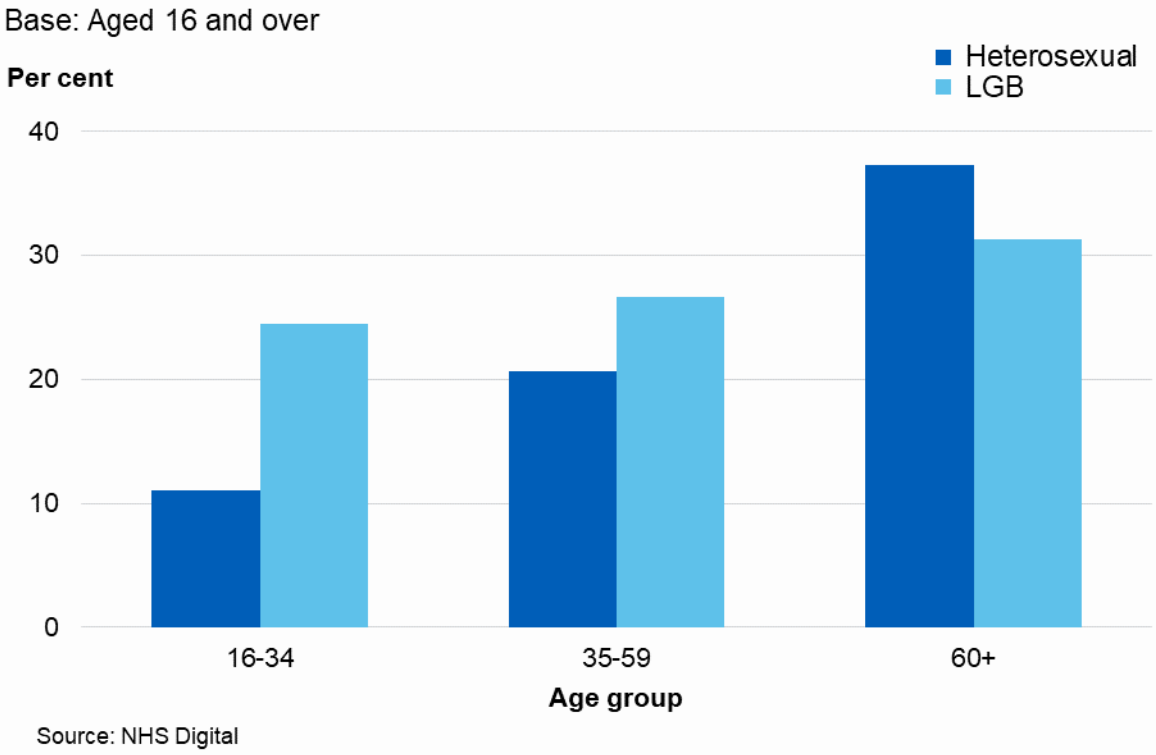
The prevalence of limiting longstanding illness was higher among LGB adults (26%) compared with heterosexual adults (22%) (sexual orientation: p<0.001).

The prevalence of limiting longstanding illness increased with age among both LGB and heterosexual adults, with a steeper increase in heterosexual adults, from 11% in ages 16-34 to 37% in those aged 60 and above, compared with LGB adults (from 24% in ages 16-34 to 31% in those aged 60 and above) (sexual orientation*age: p<0.001).

The proportions of heterosexual adults and LGB adults with limited longstanding illness were similar across white and ethnic minority groups (sexual orientation*ethnicity: p= 0.703).

Figure 3, Table 3a

Figure 3: Longstanding illness, by sexual orientation and age



Longstanding conditions

Prevalence of most common longstanding conditions, by sexual orientation

Longstanding conditions were defined as any physical or mental health condition or illness lasting or expected to last 12 months or more. Those who reported that they had such a condition, were further asked "What is the matter with you?", and their answers for up to six conditions were recorded verbatim. These were coded into 42 conditions which were further grouped into the 14 chapter categories of the ICD-10, the 10th iteration of the International Classification of Diseases,[17] covering infectious and non-communicable diseases of the body and mind.[18]

17 ICD-10 is a medical classification list by the World Health Organization (WHO), and stands for the 10th revision of the International Statistical Classification of Diseases and Related Health Problems. https://icd.who.int/browse10/2016/en

18 For detailed information on longstanding condition categories, see the HSE 2018 Longstanding Conditions report. https://files.digital.nhs.uk/AA/E265E0/HSE18-Longstanding-Conditions-rep.pdf

The most common conditions for LGB adults were mental, behavioural and neurodevelopmental disorders (16%), musculoskeletal conditions (13%) and respiratory conditions (7%). This was different for heterosexual adults, with musculoskeletal conditions being the most common (16%), followed by heart and circulatory conditions (11%), diabetes, other endocrine and metabolic, and respiratory conditions (all 8%).

Table 12a

Prevalence of longstanding conditions, by sexual orientation, sex, age and ethnicity

Overall, the prevalence of any longstanding physical or mental health conditions was higher in LGB adults (45%) compared to heterosexual adults (40%) (sexual orientation: $p<0.001$). As age increased, the prevalence of longstanding conditions increased in both LGB adults and heterosexual adults, but at a steeper rate in the heterosexual group (sexual orientation*age: $p<0.001$).

The prevalence of musculoskeletal conditions (including arthritis / rheumatism / fibrositis and back problems / slipped disc / spine / neck) was lower in LGB adults (13%) compared with heterosexual adults (16%) (sexual orientation: $p=0.005$). As age increased, the prevalence of musculoskeletal conditions increased for both LGB adults and heterosexual adults, but there was a steeper increase in heterosexual adults (sexual orientation*age: $p=0.002$).

The prevalence of mental, behavioural and neurodevelopmental disorders was higher among LGB adults (16%) compared with heterosexual adults (6%) (sexual orientation: $p<0.001$). There was a gradual decrease in prevalence of mental, behavioural and neurodevelopmental disorders as age increased for LGB adults, but for heterosexual adults, there was a significant increase in the 35-59 age group before a decrease in the 60+ age group (sexual orientation*age: $p=0.039$).

The differences in prevalence of infectious diseases (2% and <1%) and skin conditions (3% and 1%) were also statistically significant between LGB adults and heterosexual adults (sexual orientation: $p<0.001$).

The overall prevalence differences of digestive conditions (both 5%) and genito-urinary conditions (both 2%) were negligible between LGB adults and heterosexual adults, but these differences were statistically significant after controlling for the different age profiles (sexual orientation: $p=0.040$ and $p=0.026$ respectively). Around half of LGB participants were aged 16-34 and just 7% aged 60 or over compared with the heterosexual participants where 30% were aged 16-34 and 28% aged 60 or over.[19]

[19] Using weighted bases

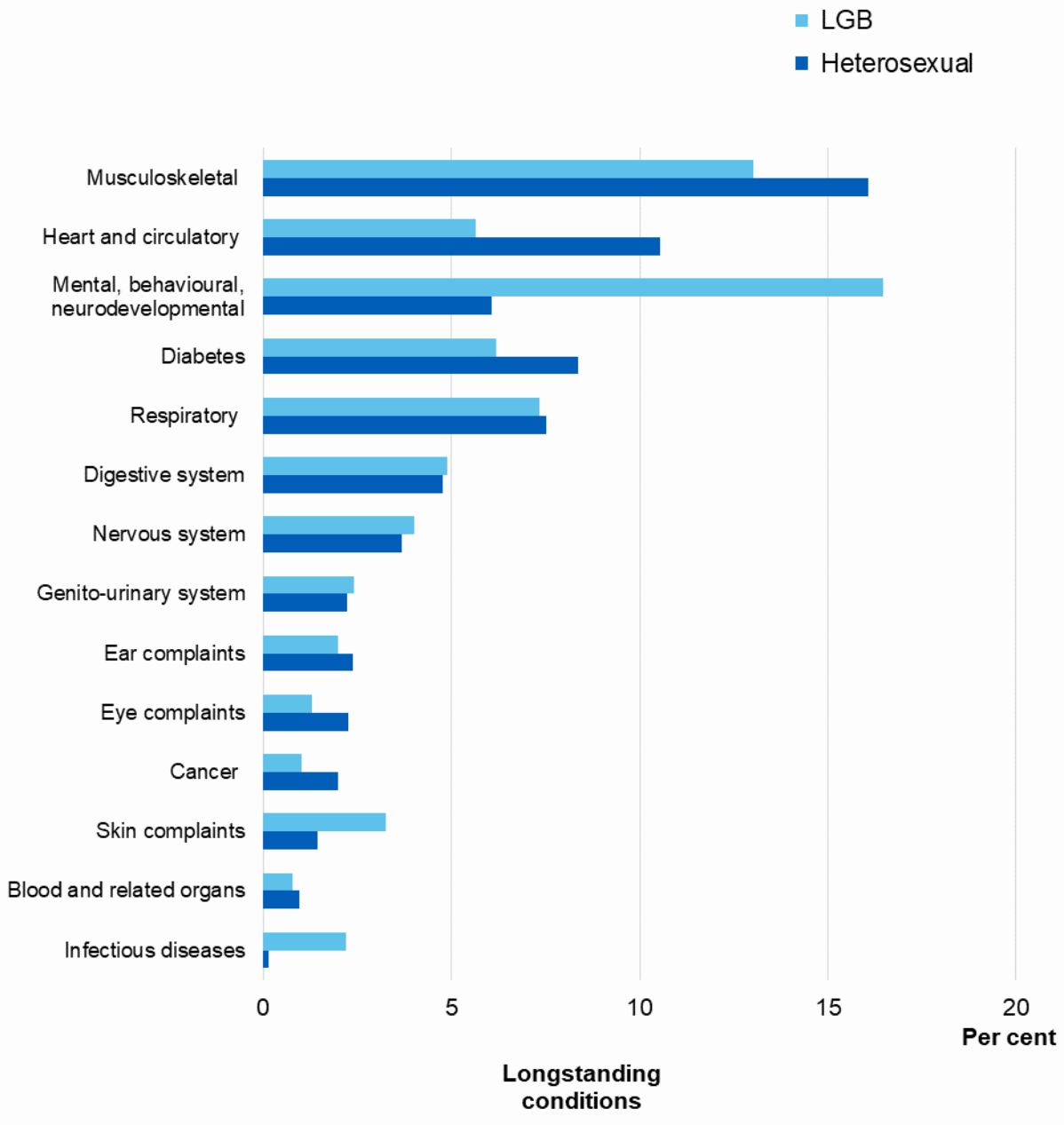
The prevalence of the following conditions were similar between LGB adults and heterosexual adults:

- Heart and circulatory conditions (sexual orientation: p=0.508)
- Diabetes (sexual orientation: p=0.059)
- Respiratory conditions (sexual orientation: p=0.238)
- Nervous system conditions (sexual orientation: p=0.053)
- Ear complaints (sexual orientation: p=0.060)
- Eye complaints (sexual orientation: p=0.526)
- Cancer (sexual orientation: p=0.811)
- Blood and related organ conditions (sexual orientation: p=0.946)

Figure 4, Table 12a

Figure 4: Prevalence of longstanding conditions, by sexual orientation

Base: Aged 16 and over



Source: NHS Digital

There were also no statistically significant differences between white and ethnic minority groups for LGB adults and heterosexual adults on all conditions.

Across the conditions, there was no statistically significant difference in the pattern of variation by sex and sexual orientation in those who had longstanding conditions, among gay or bisexual men, LGB women, heterosexual men, and heterosexual women.

Table 12a (Ethnicity), Table 12b

Diabetes

Prevalence of doctor-diagnosed diabetes, by sexual orientation, sex and ethnicity

Diabetes is characterised by high blood glucose levels (hyperglycaemia). Untreated, hyperglycaemia is associated with damage and possible failure of many organs, especially the eyes, kidneys, nerves, heart, and blood vessels. The HSE measure of diabetes used in this report is the self-reported doctor-diagnosed diabetes, collected in the main computer-assisted interview.

The proportion of heterosexual and LGB people reporting diabetes was similar at 6% among heterosexual adults and 4% among LGB adults. (sexual orientation: p=0.133).

The pattern of variation between LGB and heterosexual men and women reporting diabetes was similar (sexual orientation*sex: p=0.847).

The pattern of variation between heterosexual and LGB adults reporting diabetes was also similar across white and ethnic minority groups (sexual orientation*ethnicity: p=0.984).

Table 4a, Table 4b

Blood pressure

Prevalence of hypertension, by sexual orientation and sex

High blood pressure is defined for this report as a systolic blood pressure (SBP) at or above 140mmHg or diastolic blood pressure (DBP) at or above 90mmHg or on medication prescribed for high blood pressure, as described in the HSE 2003 report.[20] Participants are classified into one of four groups as follows:

- Normotensive untreated: SBP below 140mmHg and DBP below 90mmHg, not currently taking medication for blood pressure.
- Hypertensive controlled: SBP below 140mmHg and DBP below 90mmHg, currently taking medication for blood pressure.
- Hypertensive uncontrolled: SBP at or greater than 140mmHg and/or DBP at or greater than 90mmHg, currently taking medication for blood pressure.
- Hypertensive untreated: SBP at or greater than 140mmHg and/or DBP at or greater than 90mmHg, not currently taking medication for blood pressure.

The prevalence of hypertension (high blood pressure) increased with age among both LGB and heterosexual adults: from 5% and 6% among those aged 16-34 to 61% of LGB adults aged 60+ and 58% of heterosexual adults. Overall, the prevalence of hypertension (high blood pressure) was 15% among LGB adults and 28% among heterosexual adults but this difference was not statistically significant after controlling for the different age profiles (sexual orientation: p=0.415). Around half of LGB participants in the nurse visit were aged 16-34 and just 8% aged 60 or over compared to the heterosexual participants where 29% were aged 16-34 and 30% aged 60 or over.[21]

There was also no statistically significant difference in the prevalence of hypertension across gay or bisexual men, heterosexual men, LGB women, and heterosexual women (sexual orientation*sex: p=0.939).

Table 5a, Table 5b

20 The HSE cannot be completely accurate in identifying people with hypertension as the definition requires persistently raised blood pressure; HSE measures the blood pressure of each participant three times but on a single occasion.

21 Using weighted bases

Raised cholesterol

Total cholesterol levels were measured through blood samples taken from participants at the nurse visit. Total cholesterol is made up of beneficial HDL (high-density lipoprotein) and low- and very low-density lipoproteins (LDL and VLDL).

Too much non-HDL cholesterol is harmful and a risk factor for cardiovascular diseases including narrowing of the arteries (atherosclerosis), heart attack,[22] and stroke.[23]

Raised total cholesterol is defined as total cholesterol greater than or equal to 5mmol/L. The measure includes participants taking lipid lowering medication.

Prevalence of raised total cholesterol, by sexual orientation, sex and age

The prevalence of raised cholesterol levels was lower among both LGB and heterosexual adults aged 16-34 than in older age groups. Overall, the prevalence of raised cholesterol levels was 40% among LGB adults and 51% among heterosexual adults but this was not statistically significant after controlling for the different age profiles (sexual orientation: p=0.151). Around half of LGB participants in the nurse visit were aged 16-34 and just 8% aged 60 or over compared to the heterosexual participants where 30% were aged 16-34 and 28% aged 60 or over.[24]

However, different patterns of variation with age in raised cholesterol were seen among heterosexual and LGB adults. Among heterosexual adults, the proportion increased with age and then reduced somewhat; among LGB adults the proportion increased with each age group (sexual orientation*age p=0.041).

The pattern of prevalence of raised cholesterol was similar across gay or bisexual men, heterosexual men, LGB women and heterosexual women (sex*sexual orientation: p= 0.631).

Figure 5, Table 6a, Table 6b

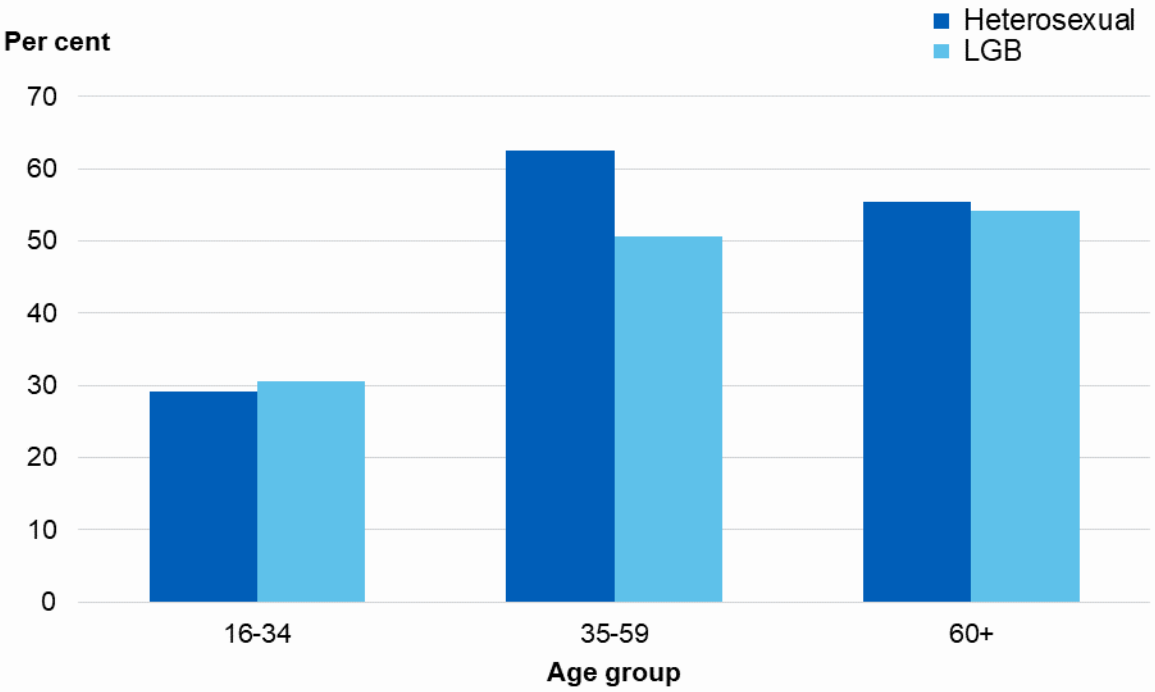
[22] Peters SAE, Singhateh Y, Mackay D, et al. *Total cholesterol as a risk factor for coronary heart disease and stroke in women compared with men: A systematic review and meta-analysis.* Atherosclerosis 2016; **248**:123-131.

[23] Law MR, Wald NJ, Rudnicka AR. *Quantifying effect of statins on low density lipoprotein cholesterol, ischaemic heart disease, and stroke: systematic review and meta-analysis.* BMJ 2003; **326**:1423-0.

[24] Using weighted bases

Figure 5: Prevalence of raised total cholesterol, by sexual orientation and age

Base: Aged 16 and over with a valid cholesterol measurement



Source: NHS Digital

Body mass index

Body mass index status, by sexual orientation, sex and ethnicity

Body mass index (BMI) is a measure of health status based on height and weight (weight in kilograms divided by the square of height in metres). BMI has been split into four major categories:

Table D: Classification of body mass index (BMI groups)

BMI (kg/m2)	Description
Less than 18.5	Underweight
18.5 to less than 25	Normal weight
25 to less than 30	Overweight
30 or more	Obese

Source: NHS Digital

The mean BMI for LGB and heterosexual adults was similar: 26.3 kg/m^2 and 27.3 kg/m^2 respectively (sexual orientation: p=0.111).

There was a statistically significant difference in the pattern of mean BMI across the groups by sexual orientation and sex. Mean BMI was 26.8 kg/m^2 in LGB women and 27.2kg/m^2 in heterosexual women. Mean BMI of gay or bisexual men was 26.0 kg/m^2 while for heterosexual men it was 27.4 kg/m^2 (sexual orientation*sex: p=0.003).

The differences between white and ethnic minority groups for LGB and heterosexual adults were not statistically significant (sexual orientation*ethnicity: p=0.927).

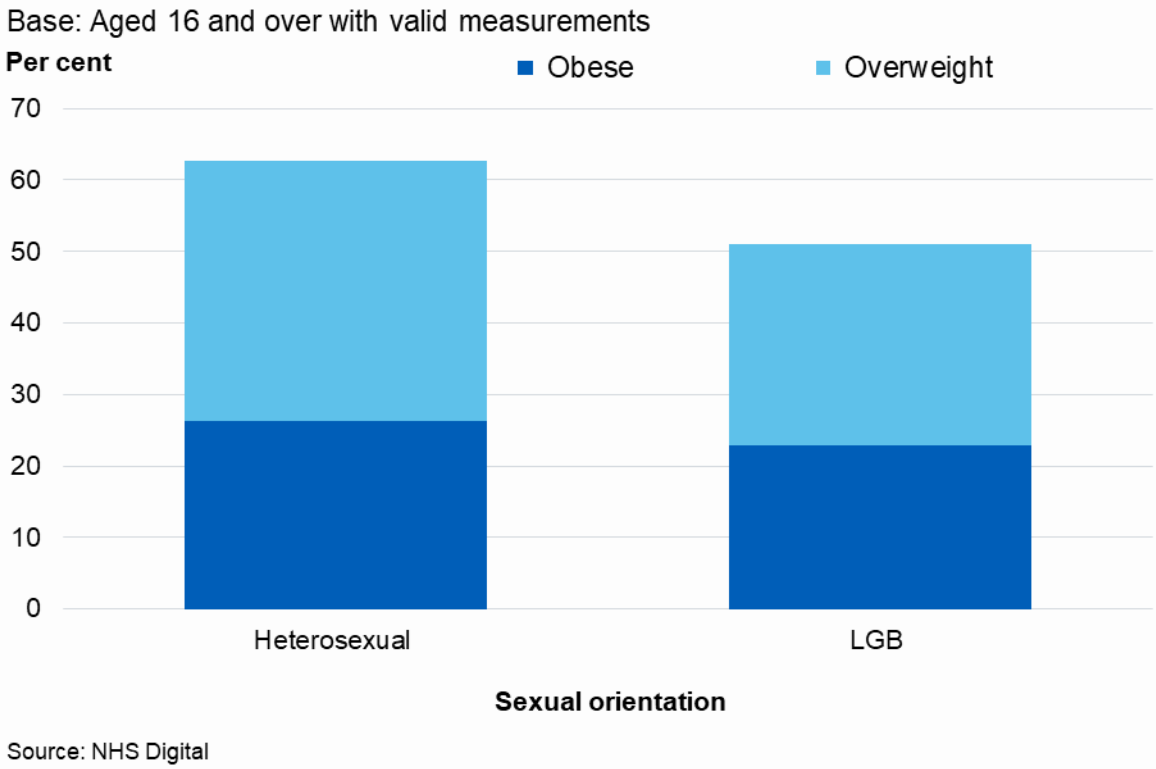
A lower proportion of LGB adults were overweight or obese (51%) than heterosexual adults (63%) (sexual orientation: p=0.006). As explained in the introduction to this report, survey estimates are subject to a margin of error. It is likely that from 2011-2018, the proportion of LGB adults who were overweight or obese was between 45.3% and 57.0% and that the proportion of heterosexual adults who were overweight or obese was between 61.7% and 63.6%.

When further stratified by sex, heterosexual men were more likely to be either overweight or obese (67%) than gay or bisexual men (49%), while the proportions among women were 58% of heterosexual women being overweight or obese compared with 53% of LGB women (sex*sexual orientation: p< 0.001).

The prevalence of overweight and obesity levels were similar across white and ethnic minority groups for both LGB and heterosexual adults (sexual orientation*ethnicity: p=0.134).

Figure 6, Table 7a

Figure 6: Body mass index status (BMI), by sexual orientation

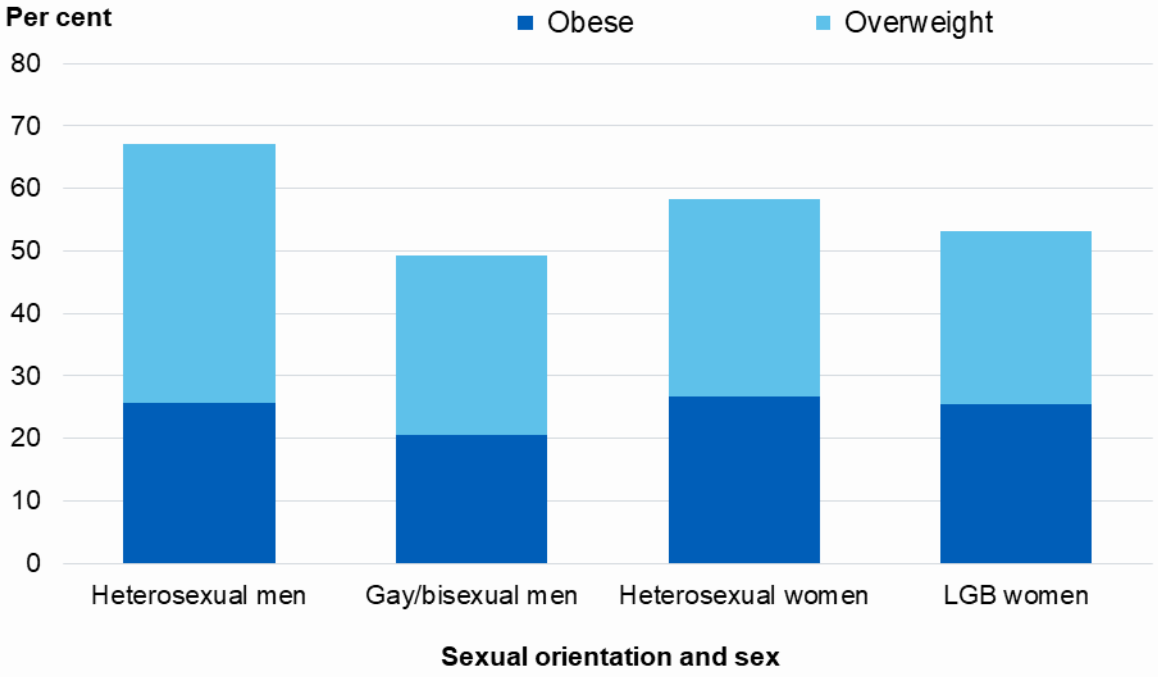


Source: NHS Digital

Figure 7, Table 7b

Figure 7: Body mass index status (BMI), by sexual orientation and sex

Base: Aged 16 and over with valid measurements



Source: NHS Digital

Prevalence of cigarette smoking

Within this report, smoking refers to cigarette use among adults. Other types of tobacco smoking, including cigar and pipe use, are not considered in the definition of a current smoker.

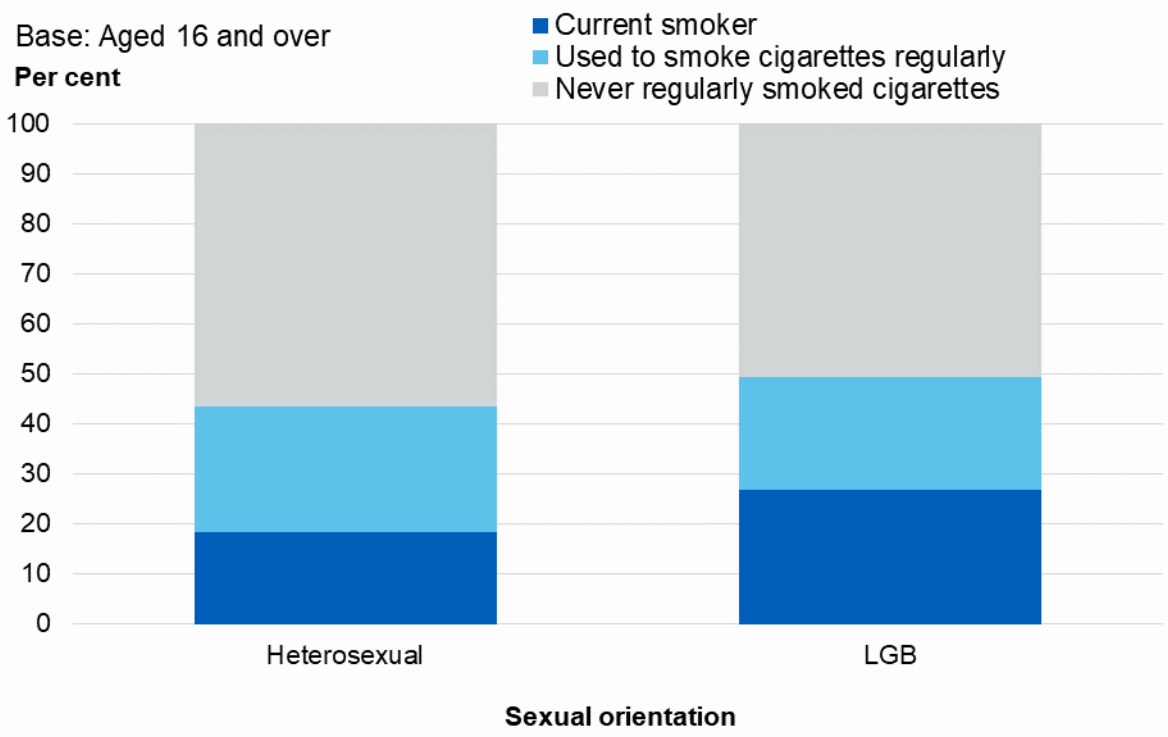
Current smokers are participants who answered 'yes' to the question 'Do you smoke cigarettes at all nowadays?'. Former regular smokers answered 'yes' to the question 'Have you ever smoked cigarettes?' and also confirmed that they had smoked cigarettes regularly, at least once a day. Participants were classified as having never regularly smoked if they had either never smoked or had not smoked at least one cigarette a day.

Cigarette smoking status, by sexual orientation, sex, and ethnicity

The proportion of current smokers was higher among LGB adults (27%) than among heterosexual adults (18%). (sexual orientation: $p<0.001$) Taking into account the margin of error, it is likely that from 2011-2018, the proportion of LGB adults who were current smokers was between 23.9% and 30.1% and that the proportion of heterosexual adults who were current smokers was between 17.8% and 18.7%.

Figure 8, Table 8a

Figure 8: Cigarette smoking status, by sexual orientation



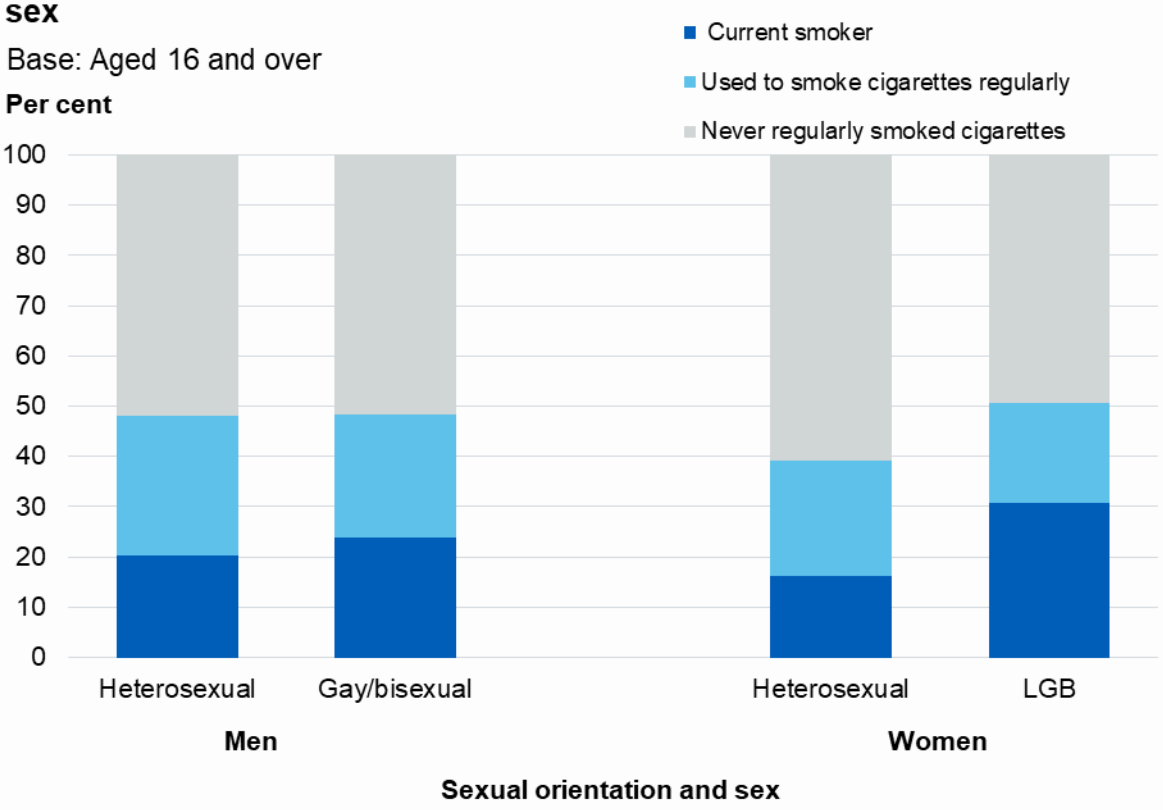
Source: NHS Digital

There were different patterns of variation between sex and sexual orientation in cigarette smoking status. The proportion of LGB women who were current smokers was 31% and the proportion of heterosexual women who were current smokers was 16%, while the proportion of gay or bisexual men and heterosexual men who were current smokers was 24% and 20% respectively (sexual orientation*sex: $p<0.001$).

Figure 9, Table 8b

Figure 9: Cigarette smoking status, by sexual orientation and sex

Base: Aged 16 and over



Source: NHS Digital

The pattern of variation in the proportion of current smokers between heterosexual and LGB adults was similar across white and ethnic minority groups (sexual orientation*ethnicity: p=0.160).

Table 8a

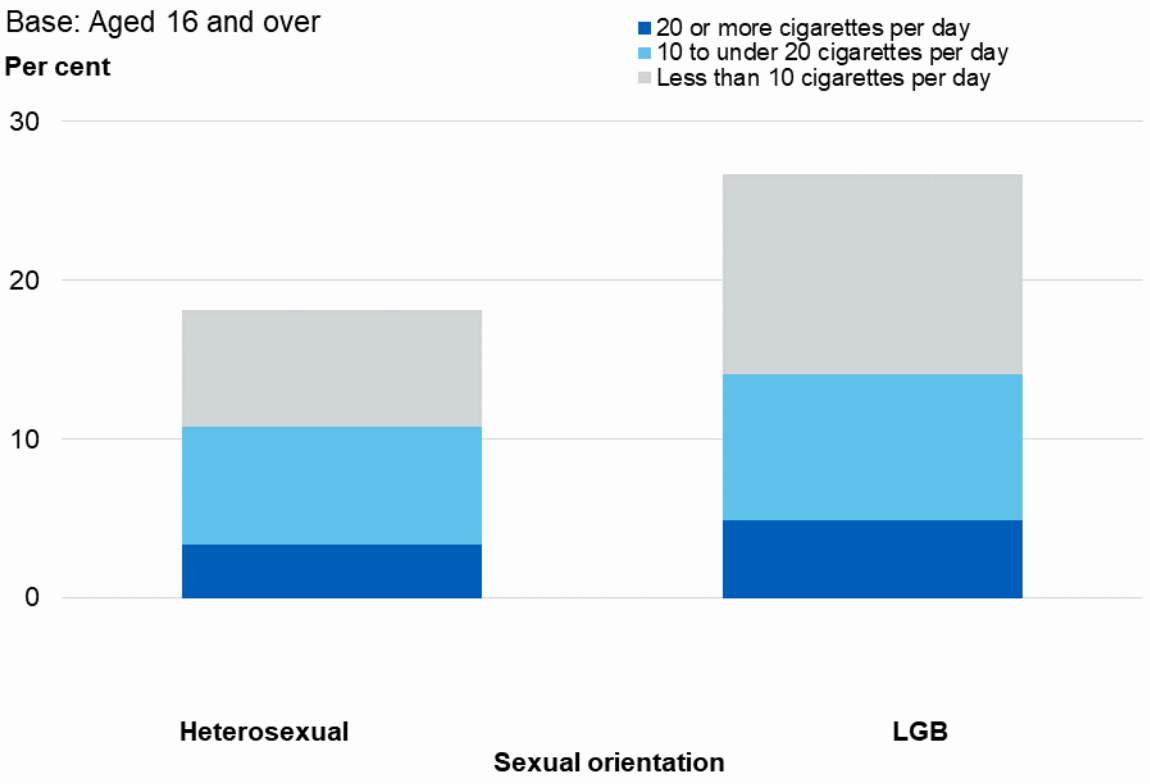
Cigarette consumption per day, by sexual orientation, sex and ethnicity

The proportion of all adults who were heavy smokers (20 or more cigarettes per day) was higher among LGB adults compared to heterosexual adults, with 5% of LGB adults being heavy smokers compared with 3% of heterosexual adults. (sexual orientation: p=0.004). The proportion of all adults who were light smokers (less than 10 cigarettes per day) was higher among LGB adults compared to heterosexual adults: 13% of LGB adults and 7% of heterosexual adults (sexual orientation: p=0.004).

The mean number of cigarettes smoked per day was 11, among both heterosexual and LGB current smokers (sexual orientation: p=0.733).

Figure 10, Table 8a

Figure 10: Cigarettes smoked per day, by sexual orientation



Source: NHS Digital

Although LGB adults were more likely to be heavy smokers compared with heterosexual adults, there was no statistically significant pattern of variation by sex and sexual orientation in those who were heavy smokers (20 or more cigarettes per day) across the groups: gay or bisexual men, LGB women, heterosexual men, and heterosexual women (sexual orientation*sex: p=0.321).

There were different patterns of variation in adults who were light smokers (less than 10 cigarettes per day) by sexual orientation and sex compared with adults who did not smoke or who smoked 10 or more cigarettes per day. 16% of LGB women and 7% of heterosexual women were light smokers, while 10% of gay or bisexual men and 8% of heterosexual men were light smokers (sexual orientation*sex: p= 0.002).

There were similar patterns of variation in the mean number of cigarettes smoked per day across gay or bisexual men, heterosexual men, LGB women and heterosexual women (sexual orientation*sex: p=0.509).

The pattern of variation in the proportion of heterosexual and LGB adults who smoked 20 or more cigarettes per day was similar across white and ethnic minority groups (sexual orientation*ethnicity: p=0.918).

The pattern of variation in mean number of cigarettes smoked per day was similar across white and ethnic minority groups (sexual orientation*ethnicity: p=0.341).

Table 8a, Table 8b

Alcohol consumption

Estimated weekly alcohol consumption, by sexual orientation, sex and ethnicity

Alcohol consumption was categorised according to self-reported average weekly consumption, converted into units of alcohol, as shown in Table E. Self-reported estimated maximum daily consumption of alcohol was also collected.

Table E: Usual weekly alcohol consumption: risk categories

Risk category	Men	Women
Non-drinker	None	None
Lower risk	Up to 14 units a week	Up to 14 units a week
Increased risk	Above 14 and up to 50 units	Above 14 and up to 35 units
Higher risk	Above 50 units a week	Above 35 units a week

Source: NHS Digital

The proportion of LGB adults who drank to a level of increased risk or higher risk (32%) was higher than the proportion of heterosexuals adults who did the same (24%) (sexual orientation: p<0.001). Taking into account the margin of error, it is likely that from 2011-2018, the proportion of LGB adults who drank to a level of increased risk or higher risk was between 27.3% and 37.2% and that the proportion of heterosexual adults who did so was between 23.8% and 25.1%.

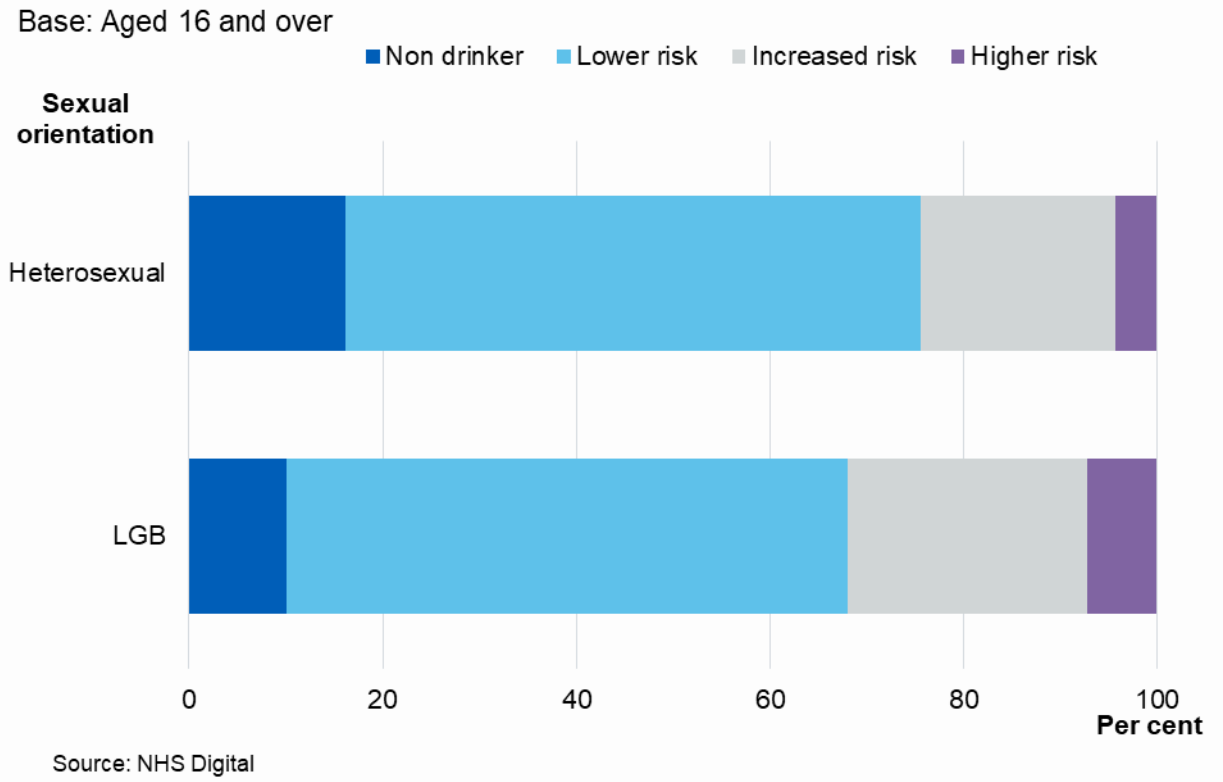
The mean number of units of alcohol consumed weekly by LGB adults was also higher compared to heterosexual adults (17.7 units and 12.7 units respectively) (sexual orientation: p<0.001).

There was a similar variation in the proportion of adults who drank at increased risk or higher risk across LGB and heterosexual men and women (sex*sexual orientation: p=0.400).

The patterns were also similar across white and ethnic minority groups for LGB and heterosexual adults (sexual orientation*ethnicity: p=0.229).

Figure 11, Table 9a, Table 9b

Figure 11: Estimated weekly alcohol consumption, by sexual orientation



Source: NHS Digital

Estimated maximum daily alcohol consumption, by sexual orientation, sex, and ethnicity

Self-reported estimated maximum daily alcohol consumption on any day in the last week was collected in the categories shown in Table F below.

Table F: Estimated maximum daily alcohol consumption on any day in the last week: daily recommended limits

Risk category	Men	Women
Non-drinker	None	None
Within the daily recommended limits	Up to and including four units	Up to and including three units
Over the daily recommended limits	More than four units	More than three units

Source: NHS Digital

The proportion of adults who drank more than the daily recommendation (three units for women; four units for men) on any day in the last week was higher among LGB adults (40%) than heterosexual adults (32%) (sexual orientation: p= 0.002). Taking into account the margin of error, it is likely that from 2011-2018, the proportion of LGB adults who drank more than the daily

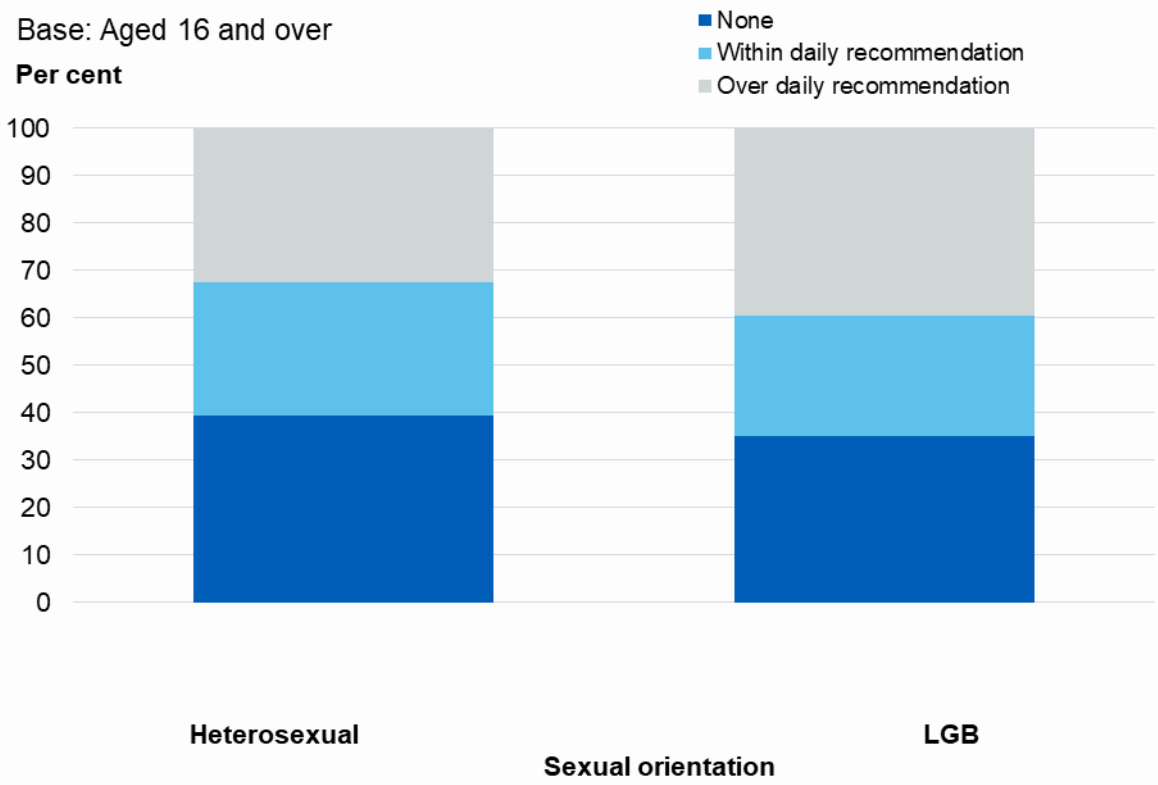
recommendation on any day in the last week was between 34.3% and 45.2% and that the proportion of heterosexual adults who did so was between 31.6% and 33.1%.

The proportion of adults who had not drunk any alcohol on any day in the last week was higher among heterosexual adults (39%) than LGB adults (35%) (sexual orientation: p=0.001).

Figure 12, Table 10a

Figure 12: Estimated maximum alcohol consumption on any day in the last week, by sexual orientation

Base: Aged 16 and over



Source: NHS Digital

The pattern of variation among LGB and heterosexual men and women in those who drank more than the recommended daily limit on any day in the last week was similar (sexual orientation*sex: p= 0.225).

The pattern of variation among LGB and heterosexual men and women who had drunk no alcohol on any day in the last week was similar (sexual orientation*sex: p= 0.308).

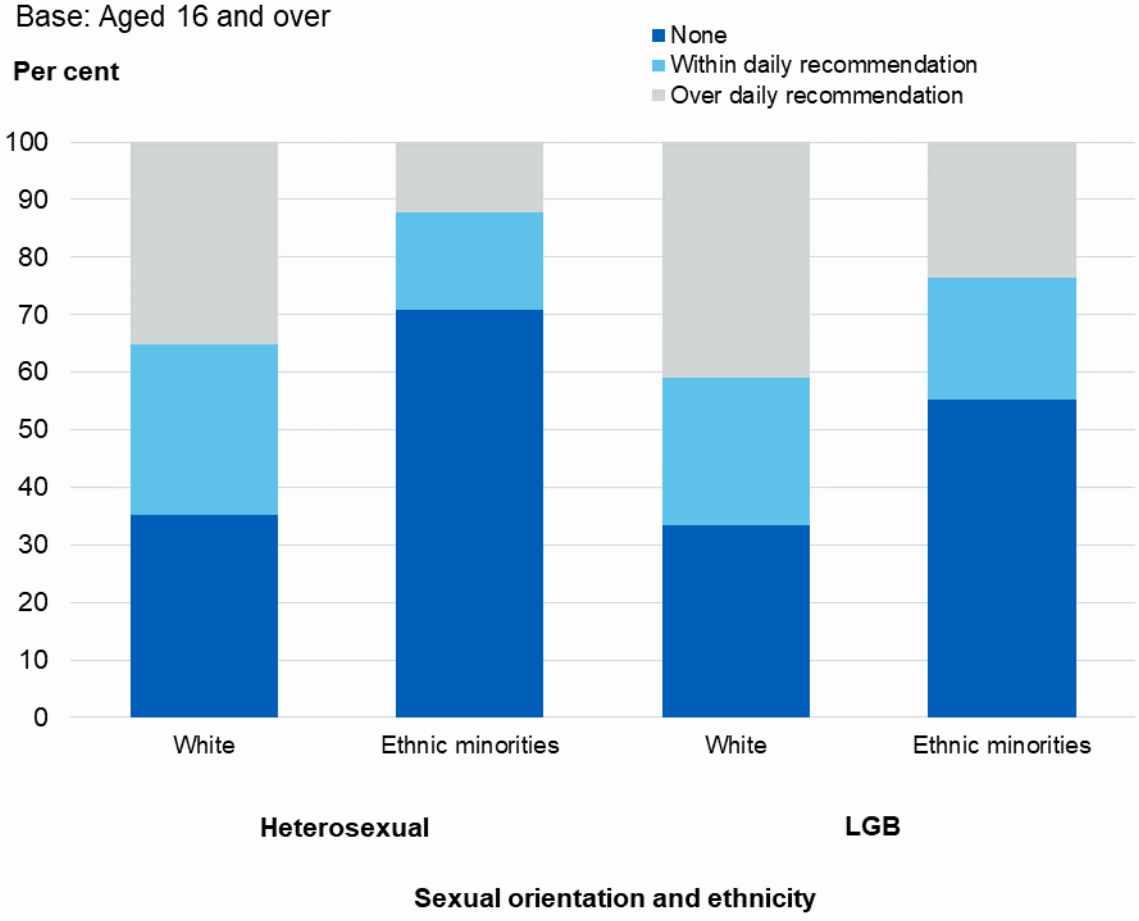
The pattern of variation between heterosexual and LGB adults who drank more than the daily recommendation on any day in the last week was similar across white and ethnic minority groups (sexual orientation*ethnicity: p=0.131).

A different pattern was seen between heterosexual and LGB adults who had not drunk any alcohol on any day in the last week across the white and ethnic minority groups. Among heterosexual adults a higher proportion of ethnic minority adults than white adults had not drunk any alcohol (71% and 35% respectively); among LGB adults the proportions of ethnic minority and white adults who had not drunk any alcohol were 55% and 33% respectively (sexual orientation*ethnicity: p= 0.036).

Figure 13, Table 10a, Table 10b

Figure 13: Estimated maximum alcohol consumption on any day in the last week, by sexual orientation and ethnicity

Base: Aged 16 and over



Source: NHS Digital

Wellbeing

Mental wellbeing, by sexual orientation, sex, age and ethnicity

The Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) is a widely used and validated measure of subjective and psychological functioning.[25] WEMWBS has 14 statements which cover psychological functioning, cognitive-evaluative dimensions and affective-emotional aspects of well-being. WEMWBS scores are presented as means and not further classified into categories. The WEMWBS scale was not asked in 2017 and 2018 of HSE.

The mean WEMWBS score was lower for LGB adults (48.9) compared to heterosexual adults (51.4) (sexual orientation: $p<0.001$). Taking into account the margin of error, it is likely that from 2011-2018, the mean WEMWBS score for LGB adults was between 48.1 and 49.6 and for heterosexual adults between 51.3 and 51.5.

The mean WEMWBS score was lower for LGB women (47.3) compared with heterosexual women (51.3), gay or bisexual men (50.2) and heterosexual men (51.5) (sex*sexual orientation: $p=0.001$).

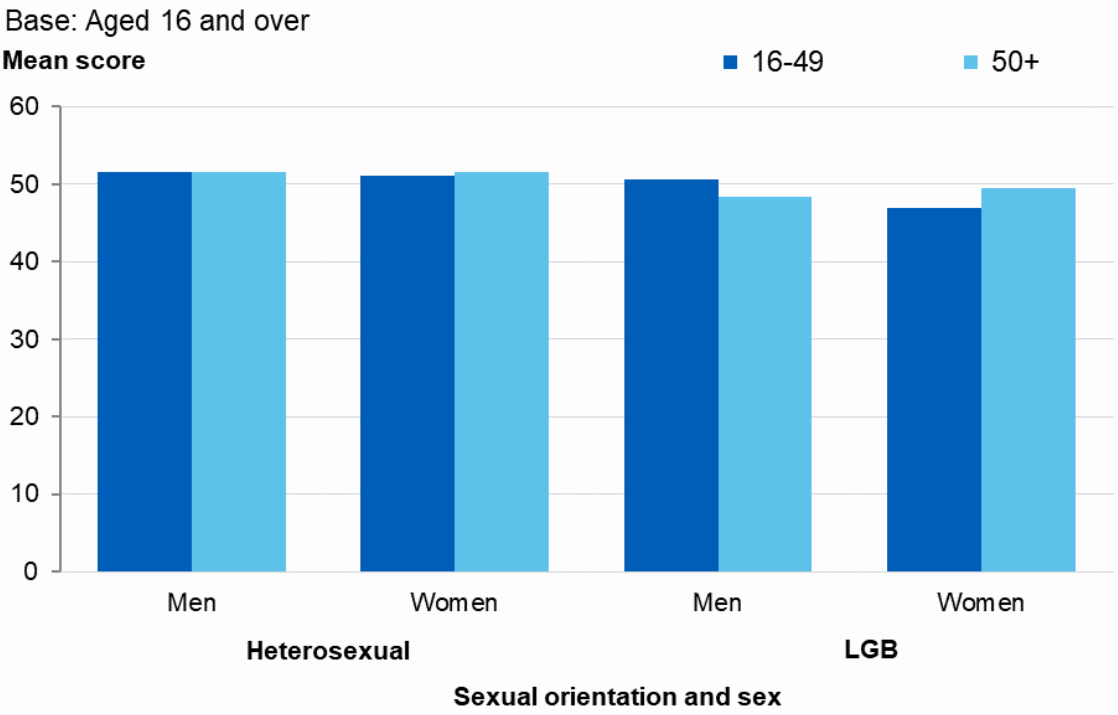
As age increased, there was little variation in mean WEMWBS score in heterosexual adults, but for gay or bisexual men WEMWBS score decreased, while it increased for LGB women (sex*sexual orientation*age: $p=0.028$).

Wellbeing scores were also similar across white and ethnic minority groups for LGB and heterosexual adults (sexual orientation*ethnicity: $p=0.378$).

Figure 14, Table 11a, Table 11b

25 The Warwick-Edinburgh Mental Scale was funded by the Scottish Government National Programme for Improving Mental Health and Well-being, commissioned by NHS Health Scotland, developed by the University of Warwick and the University of Edinburgh, and is jointly owned by NHS Health Scotland, the University of Warwick and the University of Edinburgh.

Figure 14: WEMWBS score, by sexual orientation, sex and age



Source: NHS Digital

Glossary[26]

Bisexual	Someone who is attracted to people of the same gender and other genders.
Gay	Someone who is attracted to people of the same gender.
Gender identity	A way of describing the gender with which a person identifies.
Heterosexual	Someone who is exclusively attracted to people of a different gender from themselves.
Lesbian	A woman who is attracted to other women. Women who are attracted to other women may identify as lesbian or as gay women.
Non-binary	Someone who does not identify as a man or a woman, or who identifies as both, or as something else completely.
Sexual orientation	A way of describing those you are emotionally and sexually attracted to.
Trans	An umbrella term to refer to anyone whose gender identity does not completely match the gender they were given at birth. This includes, but is not limited to, trans women, trans men, and non-binary people.

[26] The information listed is by no means exhaustive, and some people may identify themselves in a number of different ways which have not been listed here.

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