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Sexual orientation health inequality: Evidence from Understanding Society, the UK Longitudinal Household Study.

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Health inequalities among sexual minorities: Evidence from Understanding Society, the UK Longitudinal Household Study.

Abstract

Few studies from the United Kingdom have fully investigated inequalities between members of different sexual minority groups and heterosexuals over range of health outcomes. Using data from over 40 000 individuals, this study explores the health inequalities of sexual minority UK adults. We include respondents who identify as other and those who prefer not to say (PNS). Data come from wave three (2011-2012) of the nationally-representative Understanding Society, the UK Household Longitudinal Study. Sexual orientation was asked in the self-completion portion of the study. Markers of health include physical and mental functioning, minor psychological distress, self-rated health, substance use and disability. Multiple linear and logistic regression analyses tested for differences in markers of health between sexual orientation groups. Overall, heterosexual respondents had the best health while bisexual respondents had the worst. Gay and lesbian respondents reported poorer health than heterosexuals, specifically with regards to mental functioning, distress and illness status. The other and PNS respondents were most similar to each other and generally experienced fewer health inequalities than gay and lesbian respondents; they were less likely to use tobacco or alcohol. In sum, sexual minorities experience health inequality. The inclusion of other and PNS respondents has not been done in other studies and shows that while they may be healthier than gay/lesbian and bisexual respondents they still experiences poorer health than heterosexuals. Health promotion interventions are needed for these other and PNS individuals, who might not participate in interventions targeted toward known sexual minority groups.

Keywords: Health inequalities; Sexual orientation; Sexual minorities; UK

INTRODUCTION

A recent Equality and Human Rights Commission (EHRC) Report on the lives of sexual minorities in the United Kingdom (UK) concluded that more research needs to examine the factors that contribute to the health inequalities experienced by this population in the UK.[1] Specifically, research should be based on nationally representative samples, rather than those based on convenience sampling, to provide a more accurate picture of lesbians, gays and bisexuals (LGB) physical and mental health.[1] Markers of health such as self-rated health (SRH), disability and substance use are predictors of mortality and are associated with increased risk of chronic disease.[2 3] Additionally, substance use is a preventable risk factor for a myriad of chronic diseases such as cardiovascular disease, cancer and liver disease resulting in early mortality.[4 5]

Few UK studies have examined the relations of self-reported sexual orientation, identity and attitudes with health. The National Survey of Sexual Attitudes and Lifestyles (Natsal) is a UK nationally representative cross-sectional study that asks about sexual behaviors, partnerships and attitudes towards sex and sexuality and self-reported sexual orientation.[6] Natsal data have used to report on sexual behaviours and attitudes of the British population, however much less has been published on the health of the UK sexual minority population. One study found no significant differences in self-rated health (SRH) between women who exclusively had sex with men and those who exclusively had sex with women. Women who had sex with both genders had significantly lower SRH than women who exclusively had sex with men or women.[7] Both women who exclusively had sex with women and women who had sex with both genders were more likely to experience an illness or visit the hospital compared to women who exclusively had sex with men.[7] To our knowledge, no equivalent study has been conducted with men who participated in Natsal.

Two large-scale studies have been conducted in the UK with the sole purpose to understand the health of gays, lesbians and bisexuals in the UK.[8 9] The Lesbian and Bisexual women's health check was conducted in 2007 and a complementary study the Gay and Bisexual Men's Health Survey was conducted in 2011.[8 9] Similar percentages of men (76%) and women (80%) rated their health as good or very good, which is

slightly higher for men and lower for women compared to the general population.[8 9] Higher levels of smoking and drinking compared to the general population were also reported.[8 9] Yet, these studies do not adjust for socio-demographic characteristics, which might change the scope of the differences within sexual minority populations or between sexual minorities and heterosexuals.

Much of the UK literature on LGB health focuses on sexually transmitted illnesses (STIs), substance use and suicidal behaviors, which are disproportionately higher in this population. Little has been published on other aspects of health such as anxiety, physical functioning, disability and limiting illness. Additionally, studies tend to focus solely on the LGB population and comparisons with their heterosexual counterparts are rare. Often individuals who respond as other or prefer not to say are dropped from analyses. In the 2014 Integrated Household Survey, 0.3% of respondents responded as other and 3.9% responded as Don't know/refuse.[10] This is the equivalent of about 2.3 million people living in the UK who identify as other or don't know.[10] Learning more about their health and what inequalities they might face is important to understanding the health of all sexual minorities.

This study examines variation in markers of physical and mental health among both sexual minority and heterosexual individuals. Additionally we address the potential of multiple minority status, by exploring differences by socio-demographic characteristics. Our research questions are:

1. Are there differences in physical health, e.g. physical functioning, self-rated health, illness status, between heterosexual and sexual minority individuals after adjustment for socio-demographic characteristics?
2. Are there differences in mental health, e.g. lower life satisfaction, greater anxiety, between heterosexual and sexual minority individuals after adjustment for socio-demographic characteristics?
3. Are there differences in substance use, e.g. smoking, alcohol consumption, drug use, between young heterosexual and sexual minority individuals after adjustment for socio-demographic characteristics?

4. Are the differences in research questions 1-3 larger or smaller among certain sexual minority groups, e.g. gay men, lesbians, bisexuals, other or prefer not to say?

METHODS

Sample

Data come from waves two and three of the Understanding Society: the UK Household Longitudinal Study (UKHLS). This nationally, representative study began collecting data in 2009. Respondents are interviewed annually and all adults in the household 16 and older are asked to participate in the mail survey. The survey contains two parts: a computer-assisted personal interview (CAPI) and a self-completion survey conducted on a computer. In 2009, just over 50,000 individuals in over 35,000 households were interviewed. Sampling scheme details, data collection methods and annual response rates are available.[11 12]

Measures

UKHLS covers a wide range of topics including but not limited to socio-demographic characteristics, employment and educational attainment, marital status and family structure and health.

Sexual orientation was asked in wave 3 using the question "Which of the following options best describes how you think of yourself?" Responses were "heterosexual or straight", "gay or lesbian" (GL), "bisexual", "other" and "prefer not to say" (PNS). Sexual orientation was asked of all adults who consented to complete the self-completion portion of UKHLS. Heterosexual or straight is the reference category in all analyses.

Markers of physical health. Self-rated health responses ranged from "excellent" to "poor". Due to small numbers in the highest and lowest categories, categories of SRH were combined into: Good health (excellent and very good), moderate health (good) and poor health (fair and poor). Illness status was determined by two questions the first asks about disability and the second about specific types of disability.

Three categories were calculated to indicate illness status: No illness, non-limiting long-standing illness (NLLSI) and limiting long-standing illness (LLSI). The SF-12 is a well-established and validated measure of health functioning.[13 14] The SF-12 provides two summary scores, the physical component score (PCS) and the mental component score (MCS). Both the PCS and the MCS were scored to have a range of 0-100 with a mean of 50 and a standard deviation of 10.[15]

Markers of mental health. The General Health Questionnaire (GHQ-12) is a measure of generalized psychiatric morbidity and the Likert-scoring method to produce a total score with a range of 0-36.[16 17] Two questions scored on 7-point Likert scale were used to assess health and life satisfaction. For all markers of mental health, higher scores indicated better health.

Substance use. Smoking status and history questions and alcohol consumption behaviors were asked at wave 2. Smoking status was created from a combination of two questions and was categorized as: Never smoker, current smoker and former smoker. Alcohol consumption was assessed from consumption in the past 12 months. Due to small numbers in the highest and lowest categories, the seven responses were combined into five categories ranging from "Once a week or more" to "never had a drink". Young people aged 16-21 were given an additional self-completion module at wave 3 in which they were asked about ever smoking, past month alcohol consumption, binge drinking in past four weeks, and drug (i.e. cannabis, solvent and other) use and frequency of drug use since last interview.

Covariates. Socio-demographic characteristics were included to describe the different sexual minority groups as well as covariates in the regression analyses. Age was included as a continuous variable in regression analyses, but for descriptive purposes age was grouped. Males are the reference group for gender. Ethnicity was grouped into five categories: White British (reference category), Asian (Indian, Bangladeshi and Pakastani), Black African/Caribbean, Other and Mixed. Marital status had three categories: single (reference category), partnered and previously partnered marital status. Employment status was also a three category

variable: employed (reference category), economically inactive and unemployed categorize economic activity. Highest educational qualification was a six category variable with a range of no qualification (reference category) to degree (e.g. University). Religion was categorized as Christian (reference category), Muslim, Hindu, Buddhist and Other. UK generation status ranged from 1st to 4+ (reference category) and includes an "other" category.

Statistical Analysis

Chi-square tests were used to test for equal distributions of categorical variables across sexual orientation groups while general linear models (GLM) were used to test differences in the means of continuous variables across groups. GLM models controlled for age and gender. Associations between sexual orientation and health were tested via linear and logistic regressions. All regression models controlled for covariates. Analysis were conducted in SAS 9.4[18] and weighted to account for the design, sampling scheme and attrition of UKHLS.

RESULTS

Over 40 000 individuals completed the self-completion survey and answered the sexual orientation question at wave 3. Ninety-four percent of respondents identified as heterosexual/straight, 1% identified as gay or lesbian, 1% as bisexual, 1% as other and 3% preferred not to state their sexual orientation. Table 1 gives the breakdown of socio-demographic characteristics by sexual orientation; distributions of all characteristics were different across groups.

- Table 1 here –

Health Descriptives

There were differences in the distributions of health variables across the sexual orientation groups, Table 2. Overall, heterosexual respondents reported the best health while bisexual respondents had the worst health.

Gay, lesbian, other and PNS respondents' health fell in between heterosexual and bisexual respondents. Over 50% of heterosexual and GL respondents were categorized as being in good health (i.e. very good or good), while only 44% of bisexual, other and PNS rated their health as such. Conversely, 19% of heterosexual respondents were categorized as having poor health compared to between 21-28% of sexual minority respondents.

-Table 2 here-

Smoking and alcohol rates differed between heterosexual and sexual minority respondents. GL, bisexual and other respondents were more likely to report being current smokers while PNS respondents were more likely to have never smoked compared to all other groups. PNS and other respondents were more likely to report never having drank, not drinking in the past 12 months and less likely to report drinking once a week or more than heterosexual, GL and bisexual respondents , Table 2.

Substance Use among Young People

Young people age 16-21 were asked additional questions about their smoking, drinking and drug use behaviors. With the exception of past month alcohol consumption, there were differences by sexual minority and heterosexual respondents, Table 3.

Over 20% of GL, bisexual and other young people reported using cannabis compared to 16% of heterosexual and 14% of PNS young people. Sexual minority young people were more likely to report use of other drugs in the past year compared to heterosexual and PNS young people. Thirty percent or more young people in the GL, bisexual and other groups reported using drugs at least once in the past year, with most use being once or twice; more than 10% of bisexual and other young people report using drugs five or more times in the past year.

-Table 3 here-

Health regression analysis

Table 4 shows the results of linear regressions for the five continuous health variables. While patterns of health differ by outcome, one consistent finding is that compared to heterosexual respondents, bisexual respondents have worse health, even after controlling for covariates. Bisexual, (B = -4.13, 95% Confidence Intervals [CI]=-6.04, -2.22), other (B =-3.11, 95% CI=-4.58, -1.63) and PNS (B =-1.35, 95% CI=-2.21, -0.49) respondents had worse physical functioning scores than heterosexual respondents. All sexual minority respondents had worse mental functioning scores than heterosexuals. The psychological distress (GHQ-12) scores of bisexuals (B =-2.98, 95% CI=-4.53, -1.25), and other (B =-1.64, 95% CI=-2.70, -0.58) respondents were lower than heterosexual respondents. These groups also had worse health satisfaction and overall life satisfaction scores. Respondents who prefer not to say their sexual orientation had lower scores on the general health indicators, e.g. physical and mental functioning, but did not differ on the indicators of minor psychological distress, e.g. GHQ-12, health and overall life satisfaction compared to heterosexual respondents.

-Table 4 here-

Gay/lesbian (Odds Ratio [OR]=1.63, 95% CI=1.07, 2.50) and bisexual respondents (OR=2.17, 95% CI=1.40, 3.36), were more likely to report having a limiting long-standing illness compared to heterosexual respondents, Table 5. Gay/lesbian respondents were also more likely to report having a non-limiting long-standing illness (OR=1.63, 95% CI=1.05, 2.53). Only bisexual respondents were more likely to report having one or more disabilities (OR=2.28, 95% CI=1.38, 3.76). Bisexual respondents were over twice as likely and other respondents were 1.64 times more likely to report being in poor health compared to their heterosexual counterparts.

-Table 5 here-

While gay/lesbian (OR=1.97, 95% CI=1.23, 3.14) and bisexual respondents (OR=1.97, 95% CI=1.18, 3.29) were almost twice as likely to report being current smokers, PNS respondents were less likely to be current (OR=0.69, 95% CI=0.52, 0.91) or former smokers (OR=0.54, 95% CI=0.43, 0.67) compared to heterosexual respondents. While the general trend among GL and bisexual respondents was to drink more than heterosexual respondents, other and PNS respondents were less likely to drink as often. PNS respondents in particular were less likely to report once a week or more alcohol consumption, (OR=0.64, 95% CI=0.42, 0.96), compared to heterosexual respondents.

Gender and Age Interactions

The literature shows that females have poorer mental health status[19-21] and that older individuals have poorer physical health.[22 23] It is possible that the effects of discrimination might affect older sexual minorities or male bisexuals more than female bisexuals; therefore we test gender and age interactions. Two age interactions were of interest. Older other (B=0.10, 95% CI=0.02, 0.18) and PNS (B=0.06, 95% CI=0.02, 0.10) respondents had lower PCS scores compared to older heterosexual respondents (results not shown).

Smoking status also differed by age among the different sexual orientation groups. Older other respondents were less likely to be former smokers compared to older heterosexual respondents.

DISCUSSION

This paper describes the socio-demographic characteristics and several markers of health of UK heterosexuals and sexual minorities. There were mixed patterns in the differences between the groups. Overall, heterosexual respondents had the best health, while bisexual respondents had the worst. Gay and lesbian respondents did have poorer mental health as measured by the SF-12 MCS and GHQ-12. However their satisfaction scores were similar to heterosexual respondents. The physical health of GL respondents as

measured by illness status was worse than heterosexual respondents, but other measures did not differ. There were no differences in either mental or physical health between lesbian and gay respondents once socio-demographic characteristics were controlled for.

Bisexual respondents had worse mental and physical health compared heterosexual individuals; however for some markers of health there were no differences between bisexual respondents and those in other sexual minority groups. Finally other and PNS respondents did differ from heterosexual respondents for some health outcomes. Other and PNS respondents had lower physical and mental functioning scores while they did not differ in their illness status. PNS respondents were similar to heterosexual respondents in their mental health scores whereas other respondents had worse mental health . Other and PNS respondents reported better smoking and alcohol behaviours than heterosexual respondents.

The findings from this study are unique in that the health characteristics of different sexual minorities are compared with each other and to heterosexual respondents. Previous UK studies have looked at health characteristics for males[8] or females[7 9] separately and compared findings to national data of heterosexuals. One of the major findings from this study is that bisexual respondents experienced the poorest health and other studies from different countries have shown similar findings.[24-26 27 28]

To our knowledge, this is one of the first studies to include respondents who categorize themselves as other or prefer not to state their sexual orientation. The findings from this study show that these respondents should not simply be excluded when exploring mechanisms that contribute to health inequality among sexual minorities. Similar to the Integrated Household Survey, 4% of the UKHLS sample identified as other or did not state. This corresponds to approximately 2.5 million people, or the number of students in higher education in the UK in 2015-2016[29] or the number of people who work for the United States federal government.[30] The per capita healthcare costs for this population is over £450 million with expected healthcare increases in the next few years.[31] The size and potential healthcare costs for this population

further highlight the need for their inclusion in health research. Evidence of health inequality among other and PNS respondents were mixed, however in general their health was poorer than heterosexual respondents. They did engage in less health-risk behaviours, smoking and alcohol use, which could have implications for their health in the future. Additionally, their socio-demographic characteristics suggest that health outcome differences might be driven by age, ethnicity and religion which has been noted elsewhere.[32] Disclosure of sexual orientation might be more difficult for members of certain ethnic groups or people who participate in specific religions. Possible experiences of discrimination might also prevent an individual from disclosing their sexual orientation to an interviewer or health practitioner. The findings from this study suggest that it is not sufficient to combine these individuals into one "all encompassing" group as the patterns of health differed between these groups and their socio-demographic characteristics suggest they are heterogeneous. Additionally, people who do not wish to disclose their sexual orientation might participate in programs aimed at either the LGB or heterosexual populations and therefore might not see out the services or receive the healthcare they require.

The apparent health inequality experienced by sexual minorities in the UK further underline the need for researchers to include sexual orientation in their research. These findings suggest more should be done within the health service to encourage providers and patients to discuss health implications and practices associated with being a sexual minority, specifically among bisexuals. Additionally, service providers should be made aware of the health inequalities associated with non-stated sexual minorities, such as those who prefer not to state their sexual orientation or those who state theirs as other.

One limitation of this study is that sexual orientation is determined by one question and does not take into account other aspects of sexual orientation, i.e. attraction, behavior, identification, etc. The assessment of sexual orientation only once for the entire sample assumes that sexuality is stable with time while studies have shown that sexual orientation may be fluid.[33 34] Young people aged 16-21 may be asked sexual orientation multiple times as the question is asked on a biennially basis in the young person's module.

Relatedly, the use of only one question does not allow for determination of sexual orientation of the other or prefer not to say respondents. It is possible that some do not identify in any of the categories provided, alternatively, some might be transitioning between labels or categories. There is very limited research on individuals who do not identify with 'traditional' sexual orientation labels.[32] We also cannot determine non-practicing sexual minorities who might identify as other or heterosexual.

Finally, the use of a binary gender variable and assumptions of stability do not allow for identification of transgender individuals in the UKHLS dataset.

A major strength of this study is that it uses national-representative data and that it is able to directly compare socio-demographic and health characteristics between sexual orientation groups. The sexual orientation question is asked in the self-completion portion of UKHLS which may lead to higher reporting of being a sexual minority than if asked in the face-to-face interview. Sample sizes allow for gender and age comparisons; however older age group comparisons should be viewed more cautiously due to small sample sizes among the GL and bisexual groups. UKHLS is a longitudinal study which will allow for exploration of changes in health status within these groups as well as risk and protective factors associated with these changes. To our knowledge the inclusion of respondents who prefer not to state their sexual orientation or identify as other has not previously been done and their characteristics are distinct from the other groups leading to varied health outcomes.

CONCLUSIONS

We describe the health inequality of sexual orientation groups in the UK. We included respondents who identified as other or preferred not to say and found these groups had characteristics which differed from both heterosexuals and gay/lesbian and bisexual respondents. The findings from this study reinforce the findings from previous studies in establishing health inequalities among sexual minority groups. Future research should aim to identify risk factors and health service providers should be encouraged to speak to

their patients about potential health risks associated with sexual minority status which may lead to premature morbidity and mortality. This research should not focus only on the lesbian, gay, bisexual, transgender population, but also among those who identify as other or prefer not to state their orientation as they also experience poorer health outcomes.

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Conflict of Interest

The authors declare no conflicts of interest.

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Table 1. Socio-demographic Characteristics of UKHLS Wave 3 Sample by Sexual Orientation[a]

		Sexual orientation					
	Total (n=40 689)	Heterosexual (n=38 073)	Gay/Lesbian (n=482)	Bisexual (n=407)	Other (n=426)	Prefer not to say (n=1301)	p-value
Sex							
Male	48	48	62	46	44	49	
Female	52	52	38	54	56	51	<0.0001
Age Group							
15-24	15	14	21	36	19	14	
25-34	16	15	18	22	16	13	
35-44	18	17	24	14	14	13	
45-54	19	18	21	14	18	16	
55-64	16	16	10	7	11	15	
65-74	12	12	4	5	12	16	
75+	8	8	1	3	10	13	<0.0001
Ethnicity							
White British	89	90	91	84	77	73	
Asian	3	3	1	5	9	12	
Black African/Caribbean	2	2	1	2	4	4	
Other	5	5	6	7	8	11	
Mixed	1	1	1	3	2	1	<0.0001
Marital Status							
Partnered	63	63	45	41	51	52	
Single	25	23	51	52	34	30	
Previously Partnered	14	14	4	7	15	17	<0.0001
Economic Activity							
Employed	56	57	68	50	39	42	
Economically inactive	39	38	25	38	46	50	
Unemployed	5	5	7	11	15	9	<0.0001
Highest Education Qualification							
No qualification	13	12	5	8	24	23	
Other qualification	10	10	8	6	17	15	
GCSE	22	22	18	24	21	18	
A level	21	21	22	28	17	14	
Other higher qualification	12	12	11	9	9	6	
Degree	24	23	36	25	12	14	<0.0001
Generation Status							
1st generation	10	10	11	14	21	23	

2nd generation	9	8	7	12	11	10	
3rd generation	7	7	13	10	6	5	
4+ generation	64	65	62	47	51	53	
Other	10	10	8	17	11	9	<0.0001
Religion							
Christian	88	89	83	81	71	71	
Muslim	5	4	5	7	13	14	
Hindu	2	2	1	3	8	6	
Buddhist	1	1	4	1	4	1	
Other	4	4	8	8	4	8	<0.0001

[a]Raw numbers and weighted percentages.

Table 2. Health Characteristics of UKHLS Sample by Sexual Orientation[a]

	Sexual orientation										
	Heterosexual		Gay/Lesbian		Bisexual		Other		Prefer not to say		p-value
Self-rated health											
Good health	53	--	52	--	44	--	43	--	44	--	
Moderate health	27	--	27	--	32	--	30	--	28	--	
Poor health	19	--	21	--	24	--	28	--	28	--	<0.0001
Illness											
No illness	66	--	63	--	64	--	66	--	59	--	
Non-limiting long-standing illness	13	--	14	--	11	--	10	--	12	--	
Limiting long-standing illness	21	--	22	--	25	--	24	--	29	--	<0.0001
Number of disabilities											
One or more	13	--	14	--	15	--	16	--	19	--	<0.0001
Smoking Status											
Never smoker	42	--	34	--	33	--	42	--	52	--	
Current smoker	21	--	29	--	35	--	29	--	20	--	
Former smoker	38	--	37	--	32	--	29	--	28	--	<0.0001
Past 12 month alcohol consumption											
Never had a drink	3	--	2	--	3	--	6	--	7	--	
Did not drink in past 12 months	8	--	6	--	5	--	12	--	15	--	
Less often than monthly	18	--	18	--	17	--	26	--	22	--	
Monthly	15	--	16	--	22	--	17	--	14	--	
Once a week or more	57	--	57	--	54	--	39	--	41	--	<0.0001

Physical functioning	50.05	(49.93, 50.17)	48.59	(47.48, 49.70)	47.18	(46.00, 48.35)	45.54	(44.44, 46.64)	47.22	(46.58, 47.87)	<0.0001
Mental functioning	49.48	(49.36, 49.61)	46.18	(45.03, 47.32)	43.23	(41.86, 44.61)	46.46	(45.26, 47.66)	48.37	(47.74, 48.99)	<0.0001
Minor psychological distress	25.03	(24.96, 25.10)	23.36	(22.68, 24.05)	21.71	(20.81, 22.61)	23.71	(23.01, 24.41)	24.64	(24.29, 25.00)	<0.0001
Health satisfaction	4.57	(4.55, 4.59)	4.25	(4.04, 4.46)	3.98	(3.77, 4.18)	4.05	(3.86, 4.23)	4.38	(4.26, 4.49)	<0.0001
Overall life satisfaction	5.15	(5.13, 5.17)	4.85	(4.67, 5.03)	4.54	(4.33, 4.74)	4.62	(4.42, 4.81)	4.94	(4.84, 5.04)	<0.0001

[a]Weighted percentages and means; Self-rated health, limiting long-standing illness, number of disabilities, smoking status, past 12 month alcohol consumption and maximum daily alcohol consumption are frequencies and p-values are chi-square tests. Physical and mental functioning, minor psychological distress, health and overall life satisfaction are means and 95% confidence intervals. P-values are from ANCOVAs which control for age and gender.

Table 3. Substance Use of UKHLS 16-21 Year olds by Sexual Orientation*

	Sexual orientation					
	Heterosexual	Gay/Lesbian	Bisexual	Other	Prefer not to say	p-value
Ever Smoke						
Yes	28	43	48	42	25	<0.0001
Past month alcohol consumption						
Never	12	7	16	13	16	
Only once	13	21	11	19	21	
2-3 times	32	27	31	30	28	
Once a week or more	43	45	43	38	34	0.29
Binge drinking in past 4 weeks						
0	38	28	33	47	60	
1	17	28	19	27	6	
2	18	8	16	14	12	
3	17	21	18	6	12	
4+	11	15	14	6	11	<0.0001
Drug use in past year						
Solvents (% Yes)	1	3	4	0	3	0.001
Cannabis (% Yes)	16	22	29	23	14	0.002
Other (% Yes)	6	14	13	11	8	0.001
Frequency of drug use in past year						
Never	77	69	60	70	76	
Once or twice	12	20	17	17	17	
Three or four times	3	3	3	0	1	
Five to ten times	2	1	7	6	0	
Ten or more times	6	6	12	8	6	0.0003

*Weighted percentages; p-values are chi-square tests.

Table 4. Parameter Estimates of Sexual Orientation on Selected Health Variables among UKHLS Adults[a]

	Heterosexual (Ref)		Gay/Lesbian		Bisexual		Other		Prefer not to say	
	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI
Physical functioning	--	--	-1.11	(-2.69, 0.47)	-4.13	(-6.04, -2.22)	-3.11	(-4.58, -1.63)	-1.35	(-2.21, -0.49)
Mental functioning	--	--	-3.16	(-4.89, -1.42)	-4.11	(-6.37, -1.85)	-2.70	(-4.44, -0.97)	-0.93	(-1.77, -0.10)
Minor psychological distress	--	--	-1.79	(-2.80, -0.78)	-2.89	(-4.53, -1.25)	-1.64	(-2.70, -0.58)	-0.22	(-0.72, 0.27)
Health satisfaction	--	--	-0.15	(-0.44, 0.13)	-0.52	(-0.84, -0.19)	-0.43	(-0.69, -0.16)	-0.09	(-0.24, 0.07)
Overall life satisfaction	--	--	-0.24	(-0.50, 0.01)	-0.53	(-0.84, -0.22)	-0.41	(-0.69, -0.14)	-0.11	(-0.25, 0.04)

[a]95% CI=95% Confident Intervals; All models adjust for age, gender, ethnicity, marital status, highest educational qualification, employment status, religion and generation status.

Table 5. Odds Ratios of Sexual Orientation on Selected Health Variables among UKHLS Adults[a]

	Heterosexual (Ref)		Gay/Lesbian		Bisexual		Other		Prefer not to say	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Illness										
No illness (Ref)										
Non-limiting long-standing illness	1.00	--	1.63	(1.05, 2.53)	0.94	(0.46, 1.94)	0.91	(0.54, 1.53)	0.94	(0.70, 1.27)
Limiting long-standing illness	1.00	--	1.63	(1.07, 2.50)	2.17	(1.40, 3.36)	0.91	(0.62, 1.34)	1.06	(0.85, 1.32)
Number of Disabilities										
Zero (Ref)	1.00	--								
One or more	1.00	--	1.41	(0.82, 2.41)	2.28	(1.38, 3.76)	1.16	(0.80, 1.78)	1.02	(0.81, 1.29)
Self-rated Health										
Good health (Ref)										
Moderate health	1.00	--	1.00	(0.67, 1.50)	1.32	(0.82, 2.11)	1.16	(0.80, 1.67)	1.22	(0.99, 1.51)
Poor health	1.00	--	1.31	(0.84, 2.06)	2.33	(1.45, 3.75)	1.64	(1.13, 2.38)	1.14	(0.90, 1.44)
Smoking Status										
Never Smoker (Ref)										
Current Smoker	1.00	--	1.97	(1.23, 3.14)	1.97	(1.18, 3.29)	0.95	(0.63, 1.44)	0.69	(0.52, 0.91)
Former Smoker	1.00	--	1.40	(0.93, 2.12)	1.14	(0.72, 1.82)	0.65	(0.42, 1.00)	0.54	(0.43, 0.67)
Past 12 month alcohol consumption										
Never had a drink (Ref)										
Did not drink in past 12 months	1.00	--	1.61	(0.50, 5.20)	0.95	(0.29, 3.11)	1.10	(0.56, 2.16)	1.02	(0.70, 1.49)
Less often than monthly	1.00	--	1.75	(0.55, 5.57)	1.92	(0.62, 5.90)	1.14	(0.57, 2.28)	1.07	(0.71, 1.62)
Monthly	1.00	--	1.54	(0.48, 4.98)	1.87	(0.61, 5.67)	0.88	(0.41, 1.87)	0.89	(0.57, 1.41)
Once a week or more	1.00	--	1.02	(0.33, 3.14)	1.81	(0.61, 5.35)	0.67	(0.32, 1.41)	0.64	(0.42, 0.96)

[a]95% CI=95% Confident Intervals; All models adjust for age, gender, ethnicity, marital status, highest educational qualification, employment status, religion and generation status.

Highlights

- Levels of mental health among gays and lesbians were poorer than heterosexual's.
- Bisexuals experienced the worst health compared to heterosexual respondents.
- Other and prefer not to say respondent's markers of health were comparable.