Office for National Statistics

Statistical bulletin

Sociodemographic inequalities in suicides in England and Wales: 2011 to 2021

A population level analysis comparing the risk of dying by suicide across sociodemographic groups in adults in England and Wales.

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Release date:
6 March 2023

Next release:
To be announced

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1 . Main points

- Rates of suicide were higher in men compared with women across all ages, with the highest rates in men aged 40 to 50 years, in England and Wales from 2011 to 2021.
- For men aged 40 to 50 years, the highest rates of suicide were in disabled people, those who have never worked or are in long-term unemployment, or are single (never been married or in a civil partnership).
- For ethnicity, rates of suicide were highest in the White and Mixed/Multiple ethnic groups for both men and women.
- People who reported belonging to any religious group generally had lower rates of suicide, compared with those who reported no religion; however, rates were higher in Buddhists and "Other" religious groups.
- Disabled people had higher rates of dying by suicide than non-disabled people.

If you are a journalist covering a suicide-related issue, please consider following the Samaritans' media guidelines on the reporting of suicide because of the potentially damaging consequences of irresponsible reporting. In particular, the guidelines advise on terminology and include links to sources of support for anyone affected by the themes in the article.

If you are struggling to cope, please call Samaritans for free on 116 123 (UK and the Republic of Ireland) or contact other sources of support, such as those listed on the NHS help for suicidal thoughts webpage. Support is available around the clock, every day of the year, providing a safe place for you, whoever you are, and however you are feeling.

2 . Estimated rates of suicide by sociodemographic characteristics

We investigated a wide range of potential sociodemographic factors likely to be associated with the risk of suicide: sex, age, ethnicity, partnership status, disability status, religious affiliation, region, National Statistics Socio-economic Classification (NS-SEC) and armed forces membership. More information on the study population is available in Section 5: Measuring the data. We used statistical models to estimate the rates of suicide across sociodemographic groups.

Age and sex

Estimated rates of suicide were higher in men (19.75 per 100,000 people, 95% confidence interval (CI): 19.31 to 20.20) compared with women (6.45 per 100,000 people, 95% CI: 6.20 to 6.70). The highest rates of suicide were seen in men across all ages, with the highest in those aged 40 to 50 years (Figure 1). In women, the rates of suicide were highest in those aged 45 to 50 years but remained lower than men across all age groups.

Figure 1: Suicide rates were higher for men than women

Rates of suicide per 100,000 people by age and sex in England and Wales, 2011 to 2021

Download the data

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Ethnicity

Estimated rates of suicide were highest in the White (men: 21.03 per 100,000 people, 95% CI: 20.56 to 21.51, women: 6.79 per 100,000 people, 95% CI: 6.53 to 7.05) and Mixed/Multiple ethnic groups (men: 23.56 per 100,000 people, 95% CI: 21.32 to 26.04, women: 9.57 per 100,000 people, 95% CI: 8.27 to 11.08) (Figure 2). Estimated rates of suicide were lowest for the Arab group (men: 3.75 per 100,000 people, 95% CI: 2.33 to 6.03, women: 2.54 per 100,000 people, 95% CI: 1.32 to 4.88).

Figure 2: Suicide rates were highest for White and Mixed/Multiple ethnic groups

Rates of suicide per 100,000 people by ethnicity in England and Wales, 2011 to 2021

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Religious affiliation

When assessing religion, the lowest rates of suicide were in the Muslim group (men: 5.14 per 100,000 people, 95% CI: 4.58 to 5.77, women: 2.15 per 100,000 people, 95% CI: 1.79 to 2.59) (Figure 3). The rates of suicide were highest in the Buddhist group (men: 26.58 per 100,000 people, 95% CI: 22.75 to 31.05, women: 8.88 per 100,000 people, 95% CI: 7.00 to 11.27) and religions classified as "Other" (men: 33.19 per 100,000 people, 95% CI: 28.95 to 38.06, women: 13.66 per 100,000 people, 95% CI: 11.41 to 16.34). The religions which were included in the "Other" religious group included Pagan, Spiritualist, Mixed religion, Jain and Ravidassia. For men and women, the rates of suicide were lower across the Muslim, Hindu, Jewish, Christian and Sikh groups compared with the group who reported no religion.

Figure 3: Suicide rates were generally lower for people who reported belonging to a religious group

Rates of suicide per 100,000 people by religious affiliation in England and Wales, 2011 to 2021

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Partnership status

People who described themselves as in a partnership, which is either married or in a registered same-sex civil partnership, had the lowest rates of suicide (men: 12.85 per 100,000 people, 95% CI: 12.50 to 13.21, women 4.17 per 100,000 people, 95% CI: 3.98 to 4.37) (Figure 4). This was when compared with people who described themselves as single (never been legally married or never registered for a same-sex civil partnership), separated (divorced, separated but still legally in a same-sex civil partnership or formally in a same-sex civil partnership which is now legally dissolved) or partner deceased (widowed or surviving partner from a same-sex civil partnership).

Figure 4: Suicide rates were lowest in people who were in a partnership (married or in a registered same-sex civil partnership)

Rates of suicide per 100,000 people by partnership status in England and Wales, 2011 to 2021

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Socioeconomic status and region

For National Statistics Socio-economic Classification (NS-SEC), the highest rates of suicide were seen in Class 8, the group classified as never worked and long-term unemployed (men: 37.14 per 100,000 people, 95% CI: 35.09 to 39.31, women: 12.01 per 100,000 people, 95% CI: 11.00 to 13.10) (Figure 5). For comparison, those classified as having higher managerial, administrative, and professional occupations (Class 1.1) had the lowest rates (men: 12.63 per 100,000 people, 95% CI: 11.64 to 13.70, women: 4.56 per 100,000 people, 95% CI: 3.99 to 5.20). Rates of suicide were not found to vary much between regions for men or women. See the accompanying dataset for results by region.

Figure 5: Suicide rates were highest for people who had never worked or were unemployed

Rates of suicide per 100,000 people by National Statistics Socio-economic classification (NS-SEC) in England and Wales, 2011 to 2021

Notes:

1. The NS-SEC Analytic classes are 1 Higher managerial, administrative and professional occupations, 1.1 Large employers and higher managerial and administrative occupations, 1.2 Higher professional occupations, 2 Lower managerial, administrative and professional occupations, 3 Intermediate occupations, 4 Small employers and own account workers, 5 Lower supervisory and technical occupations, 6 Semi-routine occupations, 7 Routine occupations, and 8 Never worked and long-term unemployed.

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Armed forces membership

At the time of the 2011 Census, if someone was a serving member of the armed forces, their rate of suicide was estimated to be lower than the rate for people who were not members (for both men and women) (Figure 6). The rate was lower for women who were dependants of a serving member of the British or Overseas armed forces (2.97 per 100,000 people, 95% CI: 1.76 to 5.03) compared with those who were not members or dependants of a member (6.46 per 100,000 people, 95% CI: 6.22 to 6.71). Conversely, for men the opposite was found, with dependants of serving members of the armed forces having the highest rate compared with those who were current members or not members.

Figure 6: Suicide rates were lowest in serving members of the armed forces

Rates of suicide per 100,000 people by armed forces status in England and Wales, 2011 to 2021

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Disability status

Disabled people had much higher rates of suicide (men: 48.36 per 100,000 people, 95% CI: 48.36 to 50.44, women: 18.94 per 100,000 people, 95% CI: 17.81 to 20.14) compared with non-disabled people (men: 15.88 per 100,00 people, 95% CI: 15.46 to 16.31, women: 4.47 per 100,000 people, 95% CI: 4.26 to 4.69) (Figure 7). Disability status from the 2011 Census was assessed by asking "Are your day-to-day activities limited because of a health problem or disability which has lasted, or is expected to last, at least 12 months?" They were also asked to include problems related to old age.

Figure 7: Suicide rates were higher for disabled people than non-disabled people

Rates of suicide per 100,000 people by disability status in England and Wales, 2011 to 2021

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Characteristics independently associated with the risk of suicide

We also fitted statistical models adjusted for a range of sociodemographic characteristics to examine which factors were independently associated with the risk of suicide. To compare groups, we used incident rate ratios (IRRs), which are a measure of the relative rate of an outcome in one population compared with a different population. Our results are generally consistent with the descriptive rates presented in section two. Results from the fully adjusted model can be found in our accompanying dataset.

3 . Sociodemographic inequalities in suicides in England and Wales data

Sociodemographic inequalities in suicides in England and Wales: 2011 to 2021
Dataset | Released 6 March 2023
A population level analysis comparing the risk of dying by suicide across sociodemographic groups in adults in England and Wales.

4 . Glossary

95% confidence intervals

A confidence interval is a measure of the uncertainty around a specific estimate. If a confidence interval is calculated at the 95% level, it is expected that the interval will contain the true value on 95 occasions if repeated 100 times. As intervals around estimates widen, the level of uncertainty about where the true value lies increases. The size of the interval around the estimate is strongly related to the number of deaths, and the size of the underlying population. More information is available on our Uncertainty and how we measure it for our surveys web page.

Suicide

This release is based on the National Statistics definition of suicide. This includes all deaths from intentional self-harm for persons aged 10 years and over, and deaths caused by injury or poisoning where the intent was undetermined for those aged 15 years and over. Codes corresponding to intentional self-harm (X60-X84), injury (including, but not limited to, poisoning) of undetermined intent (Y10-Y34) from the World Health Organisation's (WHO) International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10) were used.

Incidence rate ratio

An incidence rate ratio (IRR) is a measure of the relative rate of an outcome in one population compared with a different population. IRRs greater than one indicate that the outcome occurs more frequently, while fewer than one indicate that the outcome occurs less frequently.

5 . Measuring the data

We used the 2011 Census and death registration data linked by NHS number for people in England and Wales. Our final sample comprised 35,136,916 people who were aged 18 to 73 years on Census Day (27 March 2011), and who were either alive at the end of study (31 December 2021) or died between 28 March 2011 and the end of the study.

In England and Wales, when someone dies by suicide, a coroner investigates to establish the cause of death through an inquest. This results in a delay between the date of death and the registration, referred to as a registration delay. To reduce the potential bias caused by this registration delay, we used mortality data with date of death from 28 March 2011 to 31 December 2021, as well as an additional year of registrations (up to 31 December 2022). There were 35,928 suicides in our study period, with 73.9% of these suicides occurring in men (see our accompanying dataset for additional information).

We fitted Poisson generalised linear models with death by suicide being the outcome of interest. An offset was added to the model to account for the different time-at-risk periods between individuals. Time at risk was defined as time from the 2011 Census Day to date of death (any cause) or the end of the study date (31 December 2021), whichever was earlier.

First, for each predictor of interest, to estimate the difference in the rate of suicide, we fitted models adjusted for age and sex, with sex being interacted with age and the exposure of interest. Second, to understand the different pressures across the life course, we tested for an interaction between the factor of interest and age. We used the Bayesian Information Criterion (BIC) to assess model fit between the models.

To estimate rates of suicide per 100,000 people for each level of the exposure, by sex for the average age, we calculated marginal means using the model with the lowest BIC. Estimated rates of suicide produced are the rate of suicide per 100,000 people over the 10-year study period. Finally, to assess how each factor is independently associated with the risk of suicide, we fitted fully adjusted models comprising all variables considered in the analysis.

6 . Strength and limitations

The major strengths of this study include the use of a large, nationally representative cohort. The size of the cohort enables us to explore differences in the risk of suicide across a wide range of sociodemographic factors, while also adjusting for other factors.

One of the main limitations of this work is that we do not have any data on adverse life events, such as violence or abuse, bereavement, or job losses, which may be important factors affecting mental health and suicide risk. In addition, we have no information on mental health conditions, which are likely to mediate the relationship between some sociodemographic characteristics and the risk of suicide. Previous research has shown that previous self-harm and suicide attempts are the most important predictors for subsequent suicide.

It is important to highlight that our study population does not capture known groups of people such as those who migrated or did not link to the patient demographic service (PDS). All individuals in our study were counted in the 2011 Census.

Future work should aim to link health data to administrative records to account for poor mental health prior to the outcomes discussed in this bulletin. Previous research has indicated that the LGB+ population ("gay or lesbian", "bisexual" or "other sexual orientation"), transgender and non-binary populations are at an increased risk of suicide compared with the general population. In subsequent work, Census 2021 could be used to assess outcomes based on sexual orientation and gender identity, which were new questions. Sexual orientation is an umbrella term covering sexual identity, attraction, and behaviour. Gender identity refers to a person's sense of their own gender, whether man, woman, or another category, such as non-binary.

7 . Related links

Suicide rates in the UK QMI
Methodology | Last revised 30 April 2019
Quality and Methodology Information for suicides in the UK, detailing the strengths and limitations of the data, methods used, and data uses and users.

Suicides in England and Wales
Bulletin | Updated annually
Registered deaths in England and Wales from suicide analysed by sex, age, area of usual residence of the deceased, and suicide method.

8 . Cite this bulletin

Office for National Statistics (ONS), released 6 March 2023, ONS website, bulletin, Sociodemographic inequalities in suicides in England and Wales: 2011 to 2021