The University of Manchester

HQIP
Healthcare Quality Improvement Partnership

# Suicide by nurses: Update report (2011-2022)

**National Confidential Inquiry**
into Suicide and Safety in Mental Health

2024

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# Contents

# Executive Summary

## Why did we carry out the study?

The Office for National Statistics (ONS) report the risk of suicide for female nurses to be 23% above the risk for women in other occupations.[1] Our previous brief study published in 2020 examined common factors among female nurses who died by suicide between 2011 and 2016, and had recent contact with mental health services, referred to here as 'patients'.[2] The nurses were typically older than women in other occupations who died by suicide, with just under half being aged 45-54 years. Self-poisoning was high, and though the rate of contact with mental health services was similar for women in all occupations, more than half of the nurses had not been in contact in the year before they died. We now present an update to our previous report, including for general population data to the end of 2022, and patient data to the end of 2021, reflecting the most up-to-date information available for patients at the time of publication. In this update, we present equivalent data for male nurses, as well as female nurses.

This brief study update was commissioned by NHSE and is based on quantitative analysis of our existing NCISH database, which collects detailed information on people who died by suicide within 12 months of contact with mental health services. We aimed to further contribute to understanding of suicide by nurses by expanding our previous sample, and including data on both female and male nurses, specifically:

(1) An examination of ONS data on nurses who died by suicide during a 12- year period (2011-2022).

(2) A detailed analysis of nurse suicides over an eleven-year period (2011-2021) using the National Confidential Inquiry into Suicide and Safety in Mental Health (NCISH) database of people who died by suicide within 12 months of mental health service contact, including comparison with patients in different other occupations.

(3) An exploration of factors in the patient population specific to nurses who die by suicide, by making between-group comparisons of female nurses compared with women in other occupations, and male nurses compared with men in other occupations.

## What did we do?

We identified female and male nurses in the general population who died by suicide between January 1st 2011 and December 31st 2022 from mortality data provided by the ONS. This data includes details on age, coroner's conclusion at inquest, and method of death. We used the NCISH database of mental health patients who died by suicide to identify those nurses who had been in contact with mental health services in the 12 months prior to their death, referred to in this report as patients. This data includes information on sociodemographic and clinical characteristics and is available for patients who died between January 1st 2011 and December 31st 2021, reflecting the most recent year of complete data collection at the time of publication. We compared female and male nurses with women and men in other occupations in both the general population and the patient population to identify factors that could be particularly important for suicide prevention for nurses.

## What were the main findings?

### General population (2011-2022)

Most nurse suicides are in women. Female nurses are at significantly higher risk of suicide than other women whereas male nurses are not at significantly higher risk of suicide than other men. However, male nurses are at higher risk than female nurses, reflecting higher suicide rates in men in most settings. This combination of findings shows the importance of suicide prevention in both male and female nurses.

Male and female nurses who die by suicide have different characteristics, that we present here.

- We identified 621 nurses who died by suicide, over the 12-year study period (2011 - 2022). Of these 438 (71%) were female, and 183 (29%) were male. We are aware that 112 (18%) were recorded as mental health nurses. However, due to variability in the amount of detail recorded and definitions of specialities in death registration data, these numbers should be treated with caution. There was no increase in the number of nurses dying by suicide, overall, or year by year. Around a third of nurses who died by suicide were aged between 45 and 54 years.
- More nurses died by self-poisoning than people in other occupations (43% v. 29% for women; 23% v. 12% for men).
- Despite working in a healthcare setting, the rates of contact with mental health services for nurses were similar to people working in other occupations.

### Patient population (2011-2021)

Nurses who had been in contact with mental health services in the 12 months prior to their death had many factors commonly associated with suicide such as alcohol and drug misuse, self-harm and depression.

### *Female nurses*

- Between 2011 and 2012, 398 female nurses died by suicide. Further detailed information is available for the 136 (34%) of these women who were in contact with mental health services in the year before they died. Around a third (34%) of female nurse patients were aged 45-54 years, similar to women in other occupations (29%).
- Adverse life events within 3 months of death were common for all female patients. The commonest life events for both nurses and women in other occupations were financial problems and economic adversity, although details were not available. However, female nurses were reported to be experiencing more economic adversity (21% v. 13%) and to have more workplace problems (14% v. 6%) than women in other occupations.
- Self-poisoning was more common among female nurse patients than female patients in other occupations (45% v. 28%). The main drugs taken by nurses in overdose were psychotropics (26%), opiates (21%), and paracetamol (13%). Female nurses who used opiates in self-poisoning were more likely to have had these prescribed (8, 62% v. 32, 24%).

### *Male nurses*

- Between 2011 and 2021, 170 male nurses died by suicide. Further detailed information is available for the 39 (34%) of these men who were in contact with mental health services in the year before they died. Over a third (38%) were aged between 45 and 54 years, similar to men in other occupations (30%).
- More male nurses were living alone than men in other occupations (59% v. 41%). Adverse life events were common among male nurses and men in other occupations. The most common life event reported by male nurses prior to death was economic adversity (18%).
- Hanging/strangulation was the most common method of suicide among male nurses and men with other occupations (44% and 57%). Male nurse patients were significantly more likely to die by self-poisoning than male patients in other occupations (28% v. 16%). The main drugs taken by male nurses in overdose were opiates (45%) and psychotropics (36%). Male nurses were more likely than men in other occupations to use opiates in self-poisoning (45% v. 20%). Numbers were too small in this group to allow for analysis of how opiates used in self-poisoning were obtained.
- Male nurses were more likely than men in other occupations to be prescribed SSRI's/SNRI's (71% v. 52%). They were less likely to have a duration of illness of less than 12 months (9% v., 29%).

## Key messages

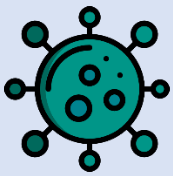
We examined a 12-year national case series of nurses who died by suicide between 2011 and 2022, expanding our previous brief study of suicide by female nurses (2011-2016). We analysed the characteristics of nurses who had contact with mental health services in the 12 months prior to their death (2011-2021), comparing female and male nurses with women and men in other occupations.

1. In all nurses who had contact with mental health services, there was evidence of factors commonly associated with suicide in the general population, including depression, self-harm, and alcohol misuse. There was an indication that male nurses were more isolated than male patients in other occupations. Effective suicide prevention for nurses needs to maintain a focus on factors conventionally associated with suicide risk.

2. Adverse life events were common in all patients. Female nurses were more likely than women in other occupations to be experiencing economic adversity and workplace problems prior to death. These findings may reflect job-related features that contribute to increased suicide risk in this group.

3. Self-poisoning among nurses was high. Both female and male nurses were more likely than women and men in other occupations to have died by self-poisoning. Knowledge about medication effects may directly add to the increased suicide risk in nurses.

4. Despite working in a healthcare setting, rates of contact with mental health services in the 12-month period prior to death were low for nurses who died by suicide. This low rate of contact may suggest that nurses did not seek or make use of available help. Consideration should be given to dedicated access to mental health care for nurses, by creating a pathway for assessment and support.



5. We found no evidence of a rise in suicide among nurses, overall or during the COVID-19 pandemic, despite evidence of increased pressures and distress. Continued vigilance is needed given ongoing effects of the pandemic in the context of workplace and economic pressures, and the ongoing increased suicide risk in this group.

## Background

The suicide rate amongst healthcare professionals is higher than the national average, with female nurses, male paramedics and female doctors believed to be at an increased risk.[3] The Office for National Statistics (ONS) reported that the suicide risk for female nurses was 23% higher than in women in other occupations.[1] This higher risk in female nurses needs to be stressed because male rates are higher than female rates in most groups and settings, and nurses are no exception. However, male nurses are not at significantly higher risk than men in other occupations. The ONS suggest that varying suicide risk across different occupations may be explained by (1) job-related features including low resources and high demands, (2) certain occupations attracting people who are already vulnerable to suicide, and (3) occupations that increase access to or knowledge of, methods of suicide.

A recent systematic review examined suicide, self-harm and suicidal ideation amongst nurses and midwives, and reported increased risk in female nurses, particularly by self-poisoning.[4] Psychiatric disorder, alcohol and drug misuse, physical health problems, occupational and interpersonal difficulties were identified as factors potentially contributing to this increased risk. Our own previous brief study examined common factors preceding suicide by female nurses who died between 2011 and 2016 and had contact with mental health services before they died.[3] We reported that female nurses were typically older than other women who died by suicide, with just under half being aged 45-54 years. Self-poisoning was more common among female nurses than women in other occupations. More than half were not in contact with mental health services prior to death.

This brief study update was commissioned by NHSE and is based on quantitative analysis of our existing National Confidential Inquiry into Suicide and Safety in Mental Health (NCISH) database. We aimed to further contribute to understanding of suicide by nurses by expanding our previous sample, and including data on both female and male nurses.

### Aims of the study

- An examination of ONS data on nurses who died by suicide during a 12-year period (2011-2022).
- A detailed analysis of nurse suicides over an eleven-year period (2011-2021) using the National Confidential Inquiry into Suicide and Safety in Mental Health (NCISH) database of people who died by suicide within 12 months of mental health service contact, including comparison with patients in different occupations.
- An exploration of factors in the patient population specific to female nurses compared with women in other occupations, and male nurses in comparison with men in other occupations.

# Method

### Data sources

The study collected data about nurses aged 18-65 who died by suicide (including probable suicide) in England between January 1st 2011 and December 31st 2022. Our sample was limited to a working age-range (18-65 years) to capture a similar sample to that reported by ONS (20-64 years). We identified suicides and probable suicides (deaths assigned an undetermined conclusion at coroners' inquest) from general population mortality data obtained by NCISH from ONS. Deaths for which a suicide (ICD-10 codes X60-X84) or undetermined conclusion (ICD-10 codes Y10-Y34 (excluding Y33.9), Y87 and Y87.2) were received at coroner's inquest were included. We refer to these deaths as suicides in the remainder of this document.

We used the NCISH database to identify those nurses who had been in contact with mental health services in the 12 months prior to their death, i.e., patient suicides. This data was available for patients who died between January 1st 2011 and December 31st 2021, reflecting the most recent year of complete data collection.

### Analysis and statistical considerations

Data were analysed using STATA 16; we present frequencies and percentages. Subgroup analysis was undertaken where sufficient numbers were reached to ensure robust findings. Proportion differences between groups were examined using chi-squared test of association to examine whether the differences between groups were statistically significant, i.e., whether the association is likely to be attributable to differences between the groups, rather than to chance. Statistical significance is reported at $p<0.05$ and $p<0.01$. The magnitude of these associations is presented using odds ratios (ORs) and 95% Confidence Intervals (CI's). An odds ratio greater than 1 indicates that the variable of measurement is associated with the group of interest (nurses). An odds ratio of less than 1 indicates that the variable of measurement is less likely in that group. Only when associations reach statistical significance are these likely to be attributable to differences between groups rather than to chance. Caution is advised in interpreting significance associated with low numbers in this report, as small changes in numbers have a large apparent effect on statistical analysis.

### General population data (2011-2022)

We examined UK mortality data between 1 January 2011 and 31 December 2022. We included all adults of working age (18-65 years) with a known occupation. Where an occupation was recorded as unknown or occupational information was missing, the case was excluded from analysis. We were notified of 52,601 deaths by suicide by people aged 18-65 years. 12,536 (24%) cases were excluded from analysis due to missing occupation data. The majority of individuals excluded from analysis were male (74%), had a conclusion of suicide (72%), and died by hanging (51%).

We included a wide range of roles, both qualified and non-qualified nurse occupations (inclusion criteria detailed below), though our figures are mainly qualified nurses (82%); significance of key variables did not change when we limited our analysis to qualified nurses. These data are derived from the mortality data provided by ONS, and our inclusion criteria is consistent with published ONS figures. Occupation is recorded at registration of death and is subject to variation in the level of occupational detail supplied.

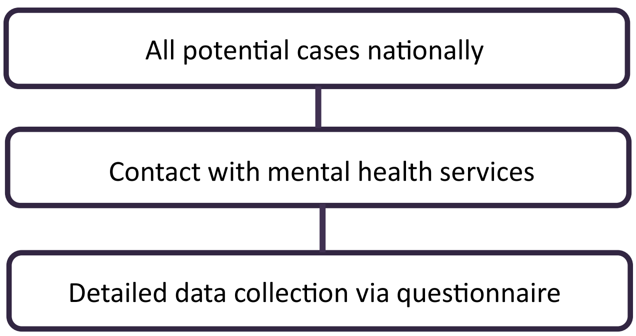
**Coding nurses using ONS occupation**

**Inclusion criteria for medical nurses:** nurse | mental health nurse | psychiatric nurse | staff nurse | charge nurse | district nurse | chief nurse | midwife | sister | matron | student/trainee nurse | healthcare assistant | health care assistant | HCA | nurse assistant | nursing auxiliary | auxiliary | health visitor

**Excluded:** nursery nurse | nursery assistant | nursery worker | nurseryman | horticultural nursery worker | dental nurse | veterinary nurse | sister of | husband of | widower of | unemployed | retired | former

### Patient population (2011-2021)

The NCISH database is a national consecutive case series of all patients who die by suicide within a year of contact with specialist mental health services. Further detailed clinical data are collected via a questionnaire completed by the clinician responsible for the care of the patient prior to their death. A full description of the NCISH method of data collection is provided on our website and in previous national reports.[6] We examined in detail the characteristics of nurses who died between 2011 and 2021 and were in contact with mental health services in the 12 months prior to their death. Results are presented separately for women and men, including comparison with other occupations.



# Results

### Suicide by nurses: general population (2011-2022)

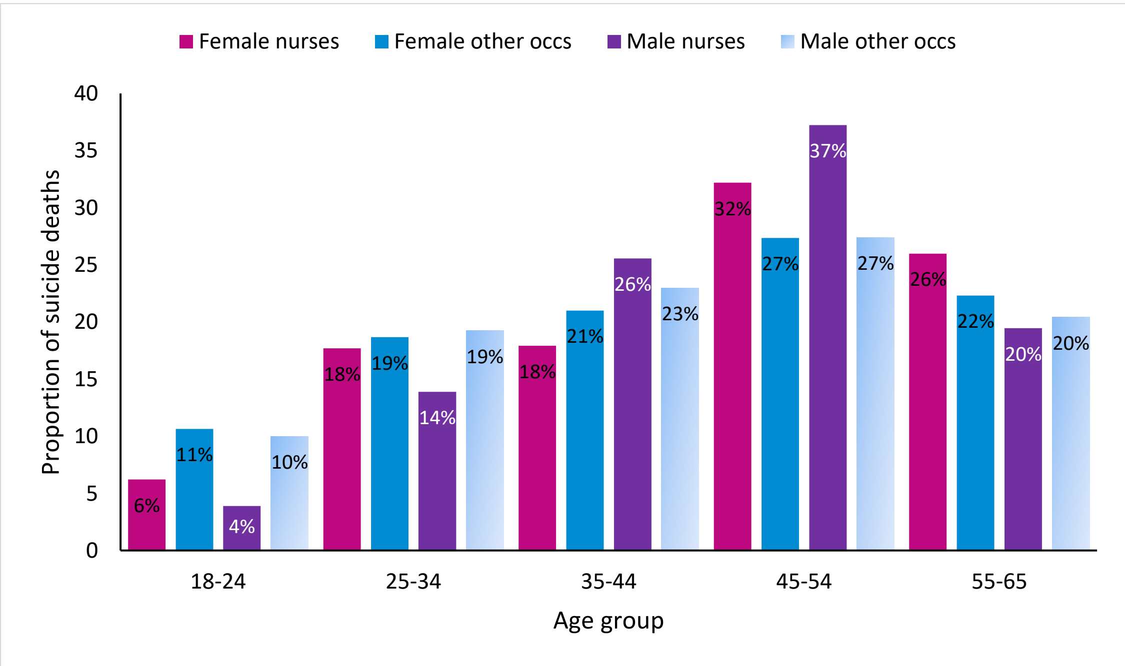
Between January 1st 2011 and December 31st 2022, we received notifications of 52,601 deaths by suicide of people aged 18-65, including 37,223 (71%) people with a recorded occupation. Of these, 621 were employed as a nurse, of whom 438 (71%) were female. 36,617 were employed in other occupations (8,073, 22% female). We are aware that 112 nurses (18%) were mental health nurses. However, caution is needed in interpreting these numbers, due to variability in recording of occupation specialty for nurses. There was no evidence of an increase in number of suicide deaths among nurses overall, or in any particular year, including during and following the COVID-19 pandemic (Table 1).

**Table 1: Number of suicide deaths per year for nurses and other occupations**

| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Nurses** | 51 | 38 | 47 | 54 | 48 | 45 | 48 | 60 | 53 | 55 | 63 | 53 |
| **Other** | 2,810 | 3,045 | 2,902 | 2,788 | 2,916 | 2,875 | 2,996 | 3,264 | 3,462 | 3,351 | 3,259 | 2,985 |
| **Total** | 2,861 | 3,083 | 2,949 | 2,842 | 2,964 | 2,920 | 3,044 | 3,324 | 3,515 | 3,406 | 3,322 | 3,038 |

Figure 1 shows the age distribution of male and female nurses compared to men and women in other occupations who died by suicide in the twelve-year period (2011-2022). Around a third of the nurses who died by suicide were aged 45-54.

**Figure 1: Age of female and male nurses and women and men in other occupations**



A higher proportion of female nurses died by self-poisoning than women in other occupations (43% v. 29%) (Table 2) and a higher number of male nurses died by self-poisoning than men in other occupations (23% v. 12%).

**Table 2: Method of suicide by women and men in the general population**

| | Female nurses N= 438 | Women other N= 8,073 | OR (95% CI) | Male nurses N=183 | Men other N= 28,529 | OR (95% CI)† |
|---|---|---|---|---|---|---|
| | N (%) | N (%) | | N (%) | N (%) | |
| **Verdict** | | | | | | |
| Open | 80 (18%) | 1,529 (19%) | 0.96 (0.75-1.24) | 21 (12%) | 4,072 (14%) | 0.78 (0.49-1.23) |
| Suicide | 358 (82%) | 6,544 (81%) | 1.05 (0.82-1.34) | 162 (89%) | 24,457 (86%) | 1.28 (0.81-2.02) |
| **Method of suicide** | | | | | | |
| Hanging/strangulation | 188 (43%) | 4,081 (51%) | 0.73 (0.60-0.89)** | 97 (53%) | 17, 970 (63%) | 0.66 (0.49-0.88)** |
| Self-poisoning | 188 (43%) | 2,293 (29%) | 1.88 (1.55-2.29)** | 41 (23%) | 3,304 (12%) | 2.21 (1.56-3.14)** |
| Jumping/multiple injuries | 21 (5%) | 765 (10%) | 0.48 0.31-0.75)** | 19 (10%) | 2,751 (10%) | 1.09 (0.66-1.75) |
| Drowning | 9 (2%) | 294 (4%) | 0.55 (0.28-1.08) | 5 (3%) | 724 (3%) | 1.08 (0.44-2.64) |
| Gas inhalation | 6 (2%) | 131 (2%) | 0.83 (0.37-1.91) | 9 (5%) | 1,062 (2%) | 1.34 (0.68-2.62) |
| Cutting/stabbing | 10 (2%) | 130 (2%) | 1.42 (0.74-2.72) | 4 (2%) | 851 (3%) | 0.73 (0.27-1.97) |
| Other | 16 (4%) | 343 (5%) | 0.85 (0.51-1.42) | 7 (4%) | 1,764 (6%) | 0.64 (0.28-1.29) |

† Odds Ratios of greater than 1 indicate an association with nurses, when statistically significant
*statistically significant ($p<0.05$), ** statistically significant ($p < 0.01$)

### Suicide by female nurses: patients (2011-2021)

Between 2011 and 2021, there were 10,624 people aged 18-65 (3,551 women and 7,073 men) who died by suicide and were in contact with mental health services in the year before death, 26% of general population suicides aged 18-65. These will be referred to as patient suicides. Of these, 7,821 had a known occupation, including 175 nurses; 136 (78%) of these were women. The rate of contact with mental health services in the year before death was similar for female nurses and women in other occupations (31% v. 32%).

Figures 2 and 3 display the method of suicide for female patients by occupation. Female nurses were twice as likely as women in other occupations to die by self-poisoning. They were more likely than women in other occupations to die by gas inhalation, though numbers were small and may be subject to random variation.

The main drugs taken by female nurse patients were psychotropics (26%), opiates (21%), and paracetamol (13%). For female patients who used opiates in self-poisoning, nurses were 5 times more likely to have been prescribed these opiates than women in other occupations (8, 62% v. 32, 24%).

**Figure 2: Method of suicide for female nurses**

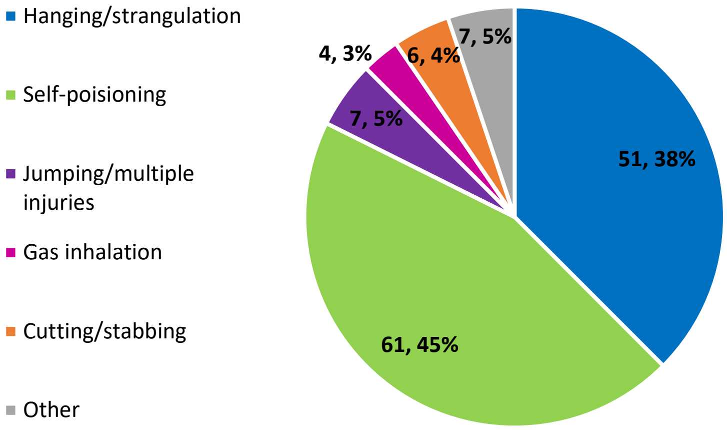



**Figure 3: Method of suicide for women in other occupations**

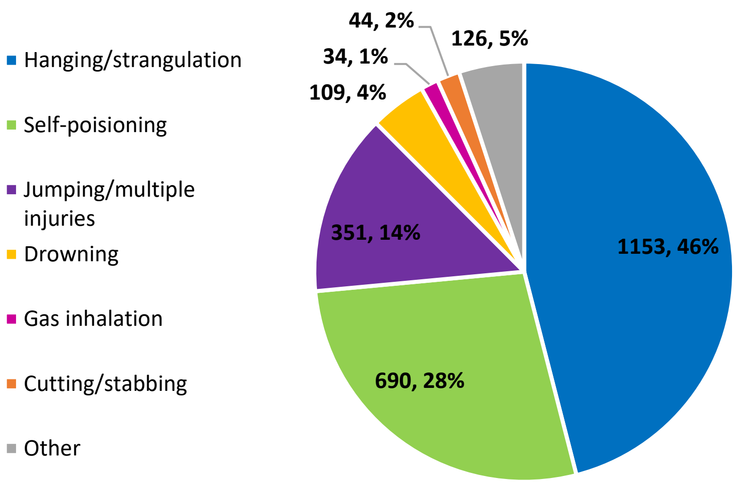



Table 3 shows the demographics and life events of female patients who were employed as nurses, in comparison with women in other occupations in the eleven-year period. Around a third of female nurses (34%) who were patients were aged 45-54 years. The NCISH questionnaire asks that clinicians record any life events that they were aware of in the three months prior to the death of their patient. Clinicians reported that female nurses more often disclosed recent experience of problems in the workplace (14% v. 6%) and economic adversity (21% vs 13%) than women in other occupations. No further details on the nature of problematic life events were available. Overall, demographic characteristics were similar for female nurses and women in other occupations in the patient group.

**Table 3: Demographics and circumstances of female patients who died by suicide by occupation (2011-2021)**

| | Female nurse N=136 | Female other occupations N=2,522 | OR (95% CI)[†] |
|---|---|---|---|
| | N (%) | N (%) | |
| **Demographic features** | | | |
| Age: median (range) | 45 (21-65) | 44 (18-65) | |
| Age group: | | | |
| 18-24 | 7 (5%) | 258 (10%) | 0.48 (0.22-1.03) |
| 25-34 | 29 (21%) | 421 (17%) | 1.35 (0.89-2.07) |
| 35-44 | 23 (17%) | 509 (20%) | 0.84 (0.51-1.27) |
| 45-54 | 46 (34%) | 727 (29%) | 1.26 (0.88-1.82) |
| 55-65 | 31 (23%) | 607 (24%) | 0.93 (0.62-1.04) |
| Not currently married | 80 (59%) | 1,512 (60%) | 0.95 (0.67-1.36) |
| Living alone | 52 (38%) | 866 (35%) | 1.14 (0.80-1.63) |
| Black & minority ethnic group | 9 (7%) | 241 (10%) | 0.65 (0.34-1.35) |
| **Life events** | | | |
| Any adverse life event <3 months | 61 (51%) | 1,089(51%) | 1.01 (0.70-1.46) |
| Problems in the workplace[a] | 16 (14%) | 120 (6%) | 2.58 (1.47-4.51)** |
| Financial problems[a] | 19 (16%) | 265 (13%) | 1.33 (0.80-2.21) |
| Economic adversity[ab] | 24 (21%) | 235 (13%) | 1.82 (1.14-2.92)* |
| History of childhood abuse[c] | 39 (34%) | 736 (37%) | 0.86 (0.58-1.28) |

[†] Odds Ratios of greater than 1 indicate an association with female nurses, when statistically significant
*statistically significant ($p<0.05$), ** statistically significant ($p < 0.01$)
[a] = occurred in the last 3 months prior to death, [b] = job loss and financial pressure, [c] = physical, sexual and/or emotional

Table 4 shows the clinical characteristics of female patients. The most common primary diagnoses were affective disorder (53% v. 49%), followed by personality disorder (20% v. 16%) for both female nurses and women in other occupations. Over half of female nurses (70, 51%) had a co-morbid condition, the most common of which was affective disorder (19, 31%). A history of self-harm was common in both female nurses (64%) and women in other occupations (69%).

**Table 4: Clinical characteristics of female patients who died by suicide by occupation (2011-2021)**

| | Female nurse N=136 | Female other occupations N=2,522 | OR (95% CI)[†] |
|---|---|---|---|
| | N (%) | N (%) | |
| **Primary diagnosis** | | | |
| Schizophrenia & other delusional disorders | 8 (6%) | 245 (10%) | 0.58 (0.28-1.19) |
| Affective disorder | 71 (53%) | 1,219 (49%) | 1.15 (0.81-1.63) |
| Anxiety disorder | 15 (11%) | 315 (13%) | 0.86 (0.50-1.49) |
| Alcohol dependence/misuse | 4 (3%) | 95 (4%) | 0.77 (0.28-2.12) |
| Drug dependence/misuse | <3 - | 39 (2%) | - |
| Personality disorder | 27 (20%) | 398 (16%) | 1.31 (0.85-2.03) |
| Eating disorder | <3 | 33 (1%) | - |
| Any secondary diagnosis | 70 (51%) | 1,347 (53%) | 0.93 (0.66-1.31) |
| Physical illness at time of death | 36 (29%) | 507 (22%) | 1.47 (0.98-2.19) |
| Duration of illness (<12 months) | 30 (24%) | 462 (20%) | 1.24 (0.81-1.89) |
| Prescribed SSRI/SNRI | 83 (67%) | 1,421 (62%) | 1.22 (0.83-1.80) |
| **Behavioural features** | | | |
| History of self-harm | 83 (64%) | 1,646 (69%) | 0.80 (0.56-1.16) |
| History of alcohol misuse[a] | 48 (38%) | 853 (37%) | 1.08 (0.75-1.57) |
| History of drug misuse[a] | 22 (17%) | 517 (22%) | 0.76 (0.48-1.22) |
| History of violence | 9 (7%) | 196 (8%) | 0.84 (0.42-1.68) |

[†] Odds Ratios of greater than 1 indicate an association with female nurses, when statistically significant
*statistically significant (p<0.05), ** statistically significant (p < 0.01)
[a] lifetime history of, recent use and/or diagnosis of

Table 5 shows the care characteristics of female patients. Around a fifth of both female nurses (26, 21%) and female patients in other occupations (470, 21%) missed their last appointment before death. Over three-quarters of female nurses (96, 79%) and female patients in other occupations (1,671, 77%) were categorised as a short-term risk during their last contact with services.

**Table 5: The care characteristics of female patients who died by suicide by occupation (2011-2021)**

| | Female nurse N= 136 | Female other Occupations N = 2,522 | OR (95% CI)[†] |
|---|---|---|---|
| | **N (%)** | **N (%)** | |
| In-patient at time of death | 10 (7%) | 169 (7%) | 1.09 (0.57-2.13) |
| Died within 3 months of discharge | 20 (16%) | 352 (15%) | 1.07 (0.65-1.75) |
| Under the care of crisis teams | 14 (11%) | 412 (17%) | 0.59 (0.34-1.05) |
| Non-adherent with medication | 9 (7%) | 280 (12%) | 0.56 (0.28-1.12) |
| Missed last appointment | 26 (21%) | 470 (21%) | 1.32 (0.84-2.07) |
| **Last admission** | | | |
| Detained under MHA | 3 (3%) | 31 (2%) | 2.01 (0.43-9.49) |
| Subject to a CTO at time of discharge | <3 | 30 (3%) | - |
| Last admission <7 days duration | 3 (5%) | 55 (9%) | 0.61 (0.29-1.27) |
| Re-admission within 3 months | 11 (10%) | 102 (17%) | 1.05 (0.53-2.07) |
| Patient-initiated discharge | <3 | 43 (<3%) | - |
| Died before follow-up appointment[a] | 4 (6%) | 30 (3%) | 2.45 (0.86-7.17) |
| **Last contact with services** | | | |
| Last contact within 1 week before death | 71 (53%) | 1,330 (53%) | 0.96 (0.69-1.38) |
| Short-term risk: low or none | 96 (79%) | 1,617 (77%) | 1.13 (0.72-1.77) |
| Long-term risk: low or none | 58 (42%) | 1,083 (53%) | 0.97 (0.67-1.43) |
| Pregnant or post-natal | <3 | 38 (2%) | - |

[†] Odds Ratios of greater than 1 indicate an association with female nurses, when statistically significant
*statistically significant ($p<0.05$), ** statistically significant ($p < 0.01$)
MHA=Mental Health Act; CTO=Community Treatment Order, a = denominator becomes 58 for nurses and 810 for women in other occupations due to available data

### Suicide by male nurses: patients

Of the 175 nurse patients who died between 2011 and 2021, 39 (22%) were men. The rate of contact with mental health services was similar to that of men in other occupations (23% of male nurses had mental health service contact v. 20% of men in other occupations).

There were no significant differences in suicide method for male nurses and male patients in other occupations (Figure 4 and 5). Of nurses who died by self-poisoning, the main drugs taken were opiates (45%) and psychotropics (36%). Male nurses were 3 times more likely than men in other occupations to use opiates in overdose (5, 45% v. 161, 20%).

**Figure 4: Method of suicide for male nurses vs. men in other occupations**

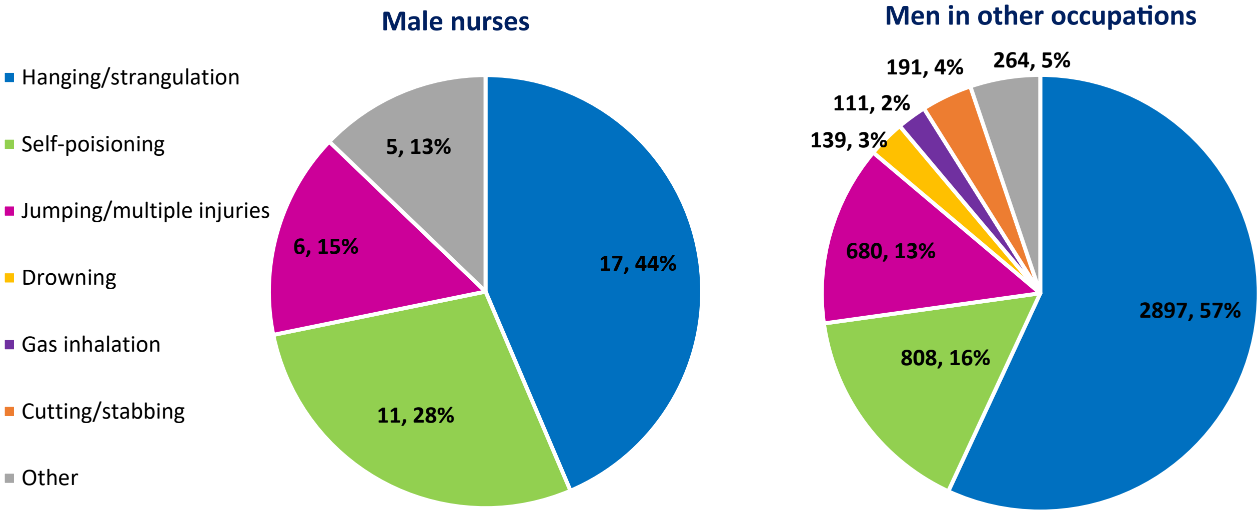



Table 6 shows the demographic characteristics and living circumstances of male patients employed as nurses, in comparison with men in other occupations in the eleven-year period. The age distribution was similar to nurses in the general population who die by suicide, 38% being aged 45-54 years. Male nurses were more likely to be living alone (59% v. 41%) then men in other occupations.

**Table 6: Features of male patients who died by suicide by occupation (2011-2021)**

| | Male nurse N=39 | Male other occupations N=5,124 | OR (95% CI)† |
|---|---|---|---|
| | N (%) | N (%) | |
| **Demographic features** | | | |
| Age: median (range) | 44 (19-64) | 44 (18-65) | |
| Age group: | | | |
| 18-24 | 3 (8%) | 394 (8%) | 1.00 (0.31-3.26) |
| 25-34 | 5 (13%) | 890 (17%) | 0.69 (0.27-1.79) |
| 35-44 | 10 (26%) | 1,227(24%) | 1.09 (0.53-2.25) |
| 45-54 | 15 (38%) | 1,528 (30%) | 1.47 (0.77-2.81) |
| 55-65 | 6 (15%) | 1,085 (21%) | 0.67 (0.28-1.62) |
| Not married | 29 (74%) | 3,403 (66%) | 1.47 (0.71-3.02) |
| Living alone | 23 (59%) | 2,103(41%) | 2.06 (1.09-3.92)** |
| Black and ethnic minority | <3 | 394 (8%) | - |
| **Life events[b]** | | | |
| Any adverse life event <3 months | 17 (50%) | 2,447 (62%) | 0.76 (0.38-1.48) |
| Problems in the workplace[a] | 3 (9%) | 343 (8%) | 1.56 (0.35-3.81) |
| Financial problems[a] | 5 (15%) | 769 (18%) | 0.81 (0.31-2.10) |
| Economic adversity[ab] | 6 (18%) | 639(18%) | 0.98 (0.40-2.39) |
| History of childhood abuse[c] | 7 (23%) | 979 (25%) | 0.90 (0.39-2.11) |

† Odds Ratios of greater than 1 indicate an association with male nurses, when statistically significant.
*statistically significant ($p<0.05$), ** statistically significant ($p < 0.01$)

[a] = occurred in the last 3 months prior to death, [b] = job loss and financial pressure, [c] = physical, sexual and/or emotional

The most common diagnoses were affective disorder (47%) followed by personality disorder (13%). (Table 7). Male nurses were twice as likely as men in other occupations to have been prescribed SSRIs/SNRIs (71% v.52%) and were less likely to have had a recent onset of illness (9% v. 29%); most had a duration of illness of more than 12months. There were few differences in clinical (Table 7) and care characteristics (Table 8) between male nurses and men in other occupations who died by suicide.

**Table 7: Clinical characteristics of male patients who died by suicide by occupation (2011-2021)**

| | Male nurse N=39 | Male other Occupations N=5,124 | OR (95% CI)[†] |
|---|---|---|---|
| | N (%) | N (%) | |
| **Primary diagnosis** | | | |
| Schizophrenia & other delusional disorders | 3 (8%) | 704 (14%) | 0.52 (0.16-1.70) |
| Affective disorder | 18 (47%) | 2,175 (43%) | 1.16 (0.61-2.00) |
| Anxiety disorder | < 3 | 731 (15%) | - |
| Alcohol dependence/misuse | < 3 | 392 (8%) | - |
| Drug dependence/misuse | - | 212 (4%) | - |
| Personality disorder | 5 (13%) | 322 (6%) | 2.19 (0.85-5.65) |
| Eating disorder | - | < 3 | - |
| Any secondary diagnosis | 24 (62%) | 2,539 (50%) | 1.63 (0.85-3.11) |
| Physical illness at time of death | 11 (28%) | 924 (18%) | 1.79 (0.89-3.60) |
| Duration of illness (<12 months) | 3 (9%) | 1,278 (29%) | 0.15 (0.04-0.63)* |
| Prescribed SSRI/SNRI | 24 (71%) | 2,349 (52%) | 2.22 (1.06-4.66)* |
| **Behavioural features** | | | |
| History of self-harm | 22 (61%) | 2,653 (56%) | 1.26 (0.64-2.46) |
| History of alcohol misuse[a] | 21 (57%) | 2,381 (51%) | 1.28 (0.66-2.45) |
| History of drug misuse[a] | 16 (44%) | 1,875 (39%) | 1.25 (0.65-2.42) |
| History of violence | 5 (13%) | 944 (18%) | 0.65 (0.25-1.67) |

[†] Odds Ratios of greater than 1 indicate an association with male nurses, when statistically significant
*statistically significant (p<0.05), ** statistically significant (p < 0.01)
[a] lifetime history of, recent use and/or diagnosis of

**Table 8: Care characteristics of male patients who died by suicide by occupation (2011-2021)**

| | Male nurse N=39 | Male other Occupations N=5,124 | OR (95% CI)[†] |
|---|---|---|---|
| | N (%) | N (%) | |
| In-patient at time of death | 3 (8%) | 236 (5%) | 1.71 (0.52-5.61) |
| Died within 3 months of discharge | < 3 | 637 (13%) | - |
| Under the care of crisis teams | 7 (20%) | 828 (17%) | 1.20 (0.52-2.75) |
| Non-adherent with medication | 6 (18%) | 576 (13%) | 1.52 (0.63-3.71) |
| Missed last appointment | 6 (18%) | 1,049 (22%) | 0.77 (0.32-1.87) |
| **Last admission** | | | |
| Detained under MHA | < 3 | 64 (29%) | - |
| Subject to a CTO at time of discharge | < 3 | 43 (3%) | - |
| Last admission <7 days duration | < 3 | 151 (12%) | - |
| Re-admission within 3 months | < 3 | 148 (11%) | - |
| Patient-initiated discharge | - | 110 (2%) | - |
| Died before follow-up appointment | < 3 | 83 (4%) | - |
| **Last contact with services** | | | |
| Last contact within 1 week before death | 16 (41%) | 2,245 (44%) | 0.87 (0.46-1.66) |
| Short-term risk low or none | 25 (74%) | 3,558 (81%) | 0.66 (0.31-1.43) |
| Long-term risk low or none | 18 (56%) | 2,412 (58%) | 0.93 (0.46-1.88) |

[†] Odds Ratios of greater than 1 indicate an association with male nurses, when statistically significant

# Summary of findings

This study examined a twelve-year national sample of nurses who died by suicide. We were notified of 621 nurses of working age who died by suicide between January 1st 2011 and December 31st 2022; 71% (438) were women. We explored further data for people who died between January 1st 2011 and December 31st 2021 and had contact with mental health services in the year before death ('patients'). We identified 175 patients who were nurses, 136 (78%) women. There was no evidence of a rise in numbers of suicides by nurses, overall or in any individual year, including during the COVID-19 pandemic. Self-poisoning was the most common method among female nurses. More male nurses than men in other occupations die by self-poisoning, though hanging/strangulation was the most common method in both male groups. Nurses had similar rates of contact with mental health services compared to men and women in other occupations.

### Characteristics of nurses who die by suicide

Nurses who had contact with mental health services before they died had many factors commonly associated with suicide such as alcohol and drug misuse, self-harm and depression. Adverse life events were common among all groups, though more female nurses reported problems in the workplace (14% v. 6%) and economic adversity (e.g., job loss, financial difficulty) (21% v. 13%) than women in other occupations, factors cited by members of the Royal College of Nursing as exacerbated by the COVID-19 pandemic. Isolation may be a factor among male nurses, who were more likely to be living alone (59% v. 41%).

Self-poisoning was the most common method among female nurses (45% v. 28%), and more common among male nurses than men in other occupations (28% v. 16%). Female nurses who used opiates in overdose were more likely to have been prescribed these opiates than women in other occupations (62% v. 24%). Male nurses were more likely to use opiates in self-poisoning than men in other occupations (5, 45% v. 161, 20%).

Suicide prevention for nurses should take into account conventional risk factors for suicide, acknowledge the potential impact of increased knowledge of methods - particularly self-poisoning - and address workplace and financial problems. These themes are reflected in the National Suicide Prevention Toolkit for England "Working together to prevent suicide in the NHS workforce".[6]

## What this study can't tell us

- Occupation is recorded at registration of death and is subject to variation in detail recorded. There may be inaccuracies in this data; we may have inadvertently excluded some people who were working as nurses and included some people no longer working as nurses. We removed individuals from analysis where it was clear that they were not currently employed. 24% of people were excluded due to no occupation data being available.
- Our study compared nurses with all other occupations in a clinical case series. We were unable to compare female nurses who died by suicide with female nurses who did not die.
- The nature of our study means we cannot establish cause and effect. Further work in this area is warranted. This might include more detailed data collection, particularly for nurses who were not patients, or a qualitative study speaking with women working as nurses and facing job-specific pressures.
- These findings are from a brief study based on quantitative analysis of existing data from ONS and NCISH. A more detailed qualitative approach is needed to understand the complex nature of suicide by people working as nurses.

## Key messages

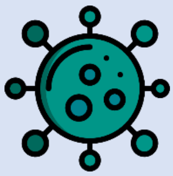
We examined a 12-year national case series of nurses who died by suicide between 2011 and 2022, expanding our previous brief study of suicide by female nurses (2011-2016). We analysed the characteristics of nurses who had contact with mental health services in the 12 months prior to their death (2011-2021), comparing female and male nurses with women and men in other occupations.

1. In all nurses who had contact with mental health services, there was evidence of factors commonly associated with suicide in the general population, including depression, self-harm, and alcohol misuse. There was an indication that male nurses were more isolated than male patients in other occupations. Effective suicide prevention for nurses needs to maintain a focus on factors conventionally associated with suicide risk.

2. Adverse life events were common in all patients. Female nurses were more likely than women in other occupations to be experiencing economic adversity and workplace problems prior to death. These findings may reflect job-related features that contribute to increased suicide risk in this group.

3. Self-poisoning among nurses was high. Both female and male nurses were more likely than women and men in other occupations to have died by self-poisoning. Knowledge about medication effects may directly add to the increased suicide risk in nurses.

4. Despite working in a healthcare setting, rates of contact with mental health services in the 12-month period prior to death were low for nurses who died by suicide. This low rate of contact may suggest that nurses did not seek or make use of available help. Consideration should be given to dedicated access to mental health care for nurses, by creating a pathway for assessment and support.



5. We found no evidence of a rise in suicide among nurses, overall or during the COVID-19 pandemic, despite evidence of increased pressures and distress. Continued vigilance is needed given ongoing effects of the pandemic in the context of workplace and economic pressures, and the ongoing increased suicide risk in this group.

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