The incidence of suicide in University students in England and Wales 2000/2001-2016/2017: record linkage study

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Abstract (250 words)

Background: There are growing concerns about the mental health and risk of suicide amongst university students.

Aim: To investigate trends in the incidence and characteristics of university student suicides in England & Wales for the academic years 2000/01 to 2016/17.

Method: Record linkage between Office for National Statistics mortality data and Higher Education Statistics Agency data for England and Wales. Poisson regression and chi-squared tests were used to investigate secular trends and the characteristics of students dying by suicide.

Results: There were 1,330 student suicide deaths from 2000/01 to 2016/17; the annual incidence in 2015/16-2016/17 was 4.7 per 100,000 students. There was evidence of a rise in incidence since 2009/10 (incidence rate ratio per year 1.04 ((95CI 1.00-1.07) p=0.029). Incidence in 2012/13 to 2016/17 was less than half the rate in the general population of a similar age. Incidence was higher in males than females and amongst undergraduates vs. postgraduates. There was some evidence of a reduced risk amongst black compared to white students (RR 0.53 (95%CI 0.32-0.88). Incidence was highest in January and lowest during the summer holidays (July - September).

Limitations: There was no age/sex or sociodemographic breakdown of the overall student population for 2000/01 to 2011/12.

Conclusion: Rates of suicide are considerably lower amongst students than the general population. In keeping with trends in young people in the wider population, the incidence of student suicide has increased since 2009/10. To inform prevention, research is needed to understand reasons for the rise in suicide in young people.

Keywords: Students; Suicide; Epidemiology; Trends.

Declarations of interest: DG, LA and KH are members of the Department of Health's (England) National Suicide Prevention Strategy Advisory Group England (LA chair). AJ chairs the National Advisory Group to the Welsh Government on suicide and self-harm prevention.

Introduction

There are growing concerns about the mental health and risk of suicide amongst university students in the UK and worldwide. Suicide (including deaths of undetermined intent from poisoning and injury) is the leading cause of death in both males and females aged 5-19 years in England and Wales (Office for National Statistics., 2017a). Furthermore, there is evidence of a rise in rates of suicide amongst 15-19 year olds in England since around 2010 (Office for National Statistics., 2018a; Bould et al 2019).

The strongest risk factors for suicide in young people are sex (male), older age, self-harm, mental illness, substance misuse, bullying, physical and sexual abuse, poor educational attainment and socioeconomic deprivation (Hawton et al., 2012a). There have been growing concerns that students may represent a new high-risk group. However, there have been no previous national studies of the incidence of suicide amongst university students in England and Wales and few international studies of this issue.

Concerns about the heightened risk of suicide amongst students are not new. Research in the 1950s and 1960s, focused on the possibility of an increased risk amongst students at Cambridge and Oxford universities (Rook., 1959; Carpenter., 1959; Parnell., 1959). More recent research from Oxford University documented that whilst suicide rates were higher than the rate in the general population in the 1970s and 1980s, this was no longer the case by the 1990s (Hawton et al., 2012b). A study from Cambridge University also showed that the suicide rate in students between 1970 and 1996 was no higher than those of young people in the general population (Collins et al., 2000). However, these studies were conducted several years ago in single institutions.

Recent surveys of universities in the USA, using data collected from university officials and counselling staff, indicate that the incidence of suicide amongst students is substantially lower than that of young adults of a similar age in the general population (Schwartz., 2011). Similar survey data from Japan indicate that the incidence of suicide amongst students has increased since 2000 and is now similar to that seen in the wider population (Uchida and Uchida 2017; WHO 2014). Such studies depend on university staff having complete knowledge of all student deaths, and the cause of these deaths, and may be biased by non-response. However, findings from the USA are supported by WHO World Mental Health

interview surveys of 18–22 year olds which indicate that the prevalence of suicidal thoughts and behaviours is lower in students than non-students (Mortier et al., 2018).

Most previous studies of student suicide deaths have investigated their incidence at specific institutions and so had limited statistical power to investigate issues that might inform preventive actions e.g. differences in risk according to year of study, undergraduates vs. postgraduates, ethnicity and time of year (e.g. exam times vs. other periods), although evidence from Japan suggests that first year students are at lower risk than those in their later years of study (Uchida and Uchidal., 2017).

Based on a unique linkage between Office for National Statistics (ONS) mortality records and Higher Education Statistics Agency (HESA) data on university students in England and Wales (Office for National Statistics., 2018b), we have investigated trends in the incidence of university student suicide deaths between the academic years 2000/2001 and 2016/2017, and the characteristics of these deaths.

Methods

Study population

Students are defined as people registered at any Higher Education (HE) provider in England and Wales which reports data to HESA and who follow a course that leads to the award of a qualification or HE provider credit. HESA records are based on the academic year: 01 August to 31 July (https://www.hesa.ac.uk/collection/c17051/introduction).

Undergraduates are defined as those studying for a bachelor's degree (e.g. BA/BSc/MB/BDS); postgraduates are defined as studying for a master's degree (MA, MSc) or higher degree (PhD). The analysis includes overseas students studying in England and Wales, but excludes those studying overseas and students in Further Education (FE) institutes i.e. institutes offering non-degree level qualifications such as higher national certificates and vocational training. Previous ONS statistics on student suicides (https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/adhocs/007478suicidesamongfulltimestudentsasdefiniedbynationalsocioeconomicclassnsseccclassificationdeathsregisteredinenglandandwalesbetween2001and201) included FE students and were based on occupational data recorded on death certificates.

Student population estimates for England and Wales were only available from HESA from 2012/2013 onwards; prior to this student numbers were aggregated for the whole of the UK (England, N Ireland, Scotland and Wales). ONS did not have access to deaths registered in Scotland or N Ireland for this study. To estimate student populations in England and Wales for earlier years we calculated the proportion of UK students that were studying in England and Wales for the period 2012/13 to 2016/17 and applied this proportion (87%) to UK student population estimates for 2000/01 and 2011/12.

Identification of suicide deaths

Student suicide is defined as a death coded as suicide or of undetermined intent that occurred before or on the end date of their studies as indexed on their HESA record and where the death was registered in England & Wales For those deaths where a HESA study end date was not provided, the end date of the HESA year (31st July) was used as an estimate to allocate deaths to a specific HESA year.

International Classification of Disease-10 (ICD) codes used to identify suicides were X60-84 and Y10-34 (excluding Y33.9 where the coroner's decision was pending for the years 2001-2006; from 2007 onwards, such deaths were coded to U50.9). Suicide method was identified using the following ICD10 codes: Drowning (X71, Y71); Fall and fracture (X80 and Y30); Poisoning (X60-X69 and Y10-Y19); Hanging, suffocation and strangulation (X70 and Y20) and Other (X72-X79, X81-X84, Y22-Y29 and Y31 to Y34). The same codes were used to identify suicide deaths in the general population.

Some deaths considered by researchers and clinicians to be probable suicides receive "narrative" decisions from coroners rather than a "short form" conclusion, such as accident, suicide or homicide. Where the coroner's narrative does not make clear whether or not the death was self-inflicted and/or there was no clear evidence that the act was carried out with suicidal intent, ONS code these as accidental deaths. We investigated the impact on rate estimates of including such hard-to-code narrative deaths by hanging and self-poisoning in rate calculations; these are the methods of suicide used in ONS assessments of the impact of narrative conclusions on estimated suicide rates (ONS 2017b).

We used date of occurrence of the death in our analysis and graphs and allocated all deaths to the last academic year (running from 1st August to 31st July) in which they were registered. In England and Wales suicide deaths are registered by coroners and there is, on average, a delay between death and registration of the death following the Coroner's inquest of around 5 months, but this can be over a year (Office for National Statistics., 2017). This means the total number of suicide deaths in the final year of the series is likely to be under-estimated.

Linkage method

ONS were provided with individual student records from HESA for the period 2000/2001 to 2016/2017. Duplicates were removed within years (for example if the student changed course and therefore had two different records) and across years (where a student was recorded in each year they studied) so that each unique person only appeared once in the dataset. For students who changed course, the latest course end-date was used as the date for data linkage to ensure that such students were not excluded from the analysis.

There was no unique identifier to link the two datasets. Variables used for linking were limited to names (first names, surnames and middle names) and dates of birth. The postcode

was not used for linking as there was no consistency in recording; for example, the death certificate may have the person's family postcode, HE postcode or their place of residence whilst at university.

The data linkage took account of a variety of different possible combinations of names, including different ordering of names, different recording of middle names, common shortenings of names and changes in names following marriage. After the records were linked based on the multiple combinations each record was manually checked to make sure the linkage had worked correctly. Postcodes were used as a potential means of confirmation.

ONS performed the linkage for all suicides in those aged 17 years and over, based on deaths registered up to 31st December 2017. As there were no deaths by suicide for those aged 17 years, the dataset represents those aged 18 years and over.

There were 812 suicides registered with a "student" occupation recorded on the death certificate that did not link to a HESA record; these were checked by reading text on occupation and any additional text provided by the coroner. Reasons for non-linkage included that these were individuals attending Secondary Schools or Further Education institutes.

Of note, over half of the suicides that linked to a HESA record did not have student recorded as the occupation on the death certificate. The recorded occupation could have been a part-time job or because they were studying as part of professional training (e.g. student nurses or medical practitioners studying for an MSc or PhD), or because they had left university.

There were 169 suicide deaths amongst individuals recorded on HESA as past students, but where the HESA record identified their reason for leaving university as death. They were not included in the main analysis but we carried out a sensitivity analysis re-estimating student suicide rates including these individuals.

Analysis

We estimated crude rates per 100,000 population with 95% confidence intervals. We compared suicide risk in different, age, gender, ethnicity year and level of study groups using Poisson regression. We also used Poisson regression to investigate whether there was statistical evidence of a rise in the number of student suicide deaths over the study period; we examined trends over the entire period and, separately, to investigate trends since 2009/10 as

a recent analysis indicates that trends in 15-19 year olds in the general population began to rise in England and Wales in this period (Bould et al., 2019). We compared methods of suicide and the monthly distribution of suicides in students aged <30 years with general population suicides using chi square tests. Statistical analysis was carried out using Stata v 15.0.

Sub-group analyses

Due to limits in the readily available student population denominators and small numbers in some categories, the analysis of student suicide by sex, age, ethnicity (based on the student's own self-assessment), year of study and undergraduate/post-graduate study are based on data for 2012/13 to 2016/17.

Furthermore, the age distribution of students differs from that of the general population and routinely available HESA data only provide a breakdown of the student population by age within four age bands: ≤20, 21-24, 25-29 and ≥30 years. As the ≥30-year age band covers a wide range of ages across which incidence, seasonal patterns and methods of suicide may differ by age, we restricted our analyses comparing suicide methods and the seasonal distribution of student suicides to student and general population suicides aged 18-29 years (78% of the total student population in 2012/13 to 2016/17).

Ethics:

The data were processed securely and linkage was approved by the National Statistician's Data Ethics Advisory Committee

Results

Overall student suicide numbers

We identified 1,330 students who died by suicide between 2000/01 and 2016/17. Of these, 878 (66%) were males and 452 (34%) were females. The median age at death was 26 years (range 18 to 82 years) and 766 (58%) were aged <30 years at the time of death. Undergraduates accounted for 83% of the deaths (n=1,109), postgraduates for 17% (n=221).

The number of student suicides ranged from 52 in 2000/01 to 102 in 2013/14 (Table 1). There was statistical evidence of an increase in the incidence of suicide between 2000/1 and 2016/17 (Figure 1) (incidence rate ratio (IRR) per year 1.02 (95% CI 1.01 to 1.03); p (trend) =0.003), although the trend appeared non-linear, with peaks between 2002/03 and 2004/5 and between 2013/14 and 2016/7. When using 2009/10 as the base year to investigate recent trends, there was also evidence of a rise in student suicides over the seven years to 2016/17 (IRR per year 1.04 (95%CI 1.00 to 1.07); p (trend) =0.029). Rates rose 15% from 4.1 per 100,000 in the two years 2009/10 and 2010/11 to 4.7 per 100,000 in 2015/16 and 2016/17.

Web Figure A shows trends in the number of student suicides in different age groups; data are presented as trends in the number of suicides rather than rates as age-specific denominator data are not available prior to 2012. There was evidence of increasing numbers of suicides in those aged 18-20 years, from an average of 12.3 per year in 2000/1-2002/3 rising to 24.0 per year in 2014/15-2016/17. Similarly, in those aged 21-24, incidence rose from an average of 10.3 per year in 2000/1-2002/3 rising to 28.7 per year in 2014/5-2016/17.

Age specific suicide rates 2012/13 to 2016/17

The incidence of suicide amongst students increased with age. Incidence in those aged 18-20 years was 2.8 per 100,000; 21-24 years: 5.0 per 100,000; 25 to 29 years: 5.9 per 100,000 and 30 years and over 6.4 per 100,000.

The age-specific incidence of suicide was considerably lower amongst students compared to the general population (Figure 2). We excluded students aged ≥30 years from the figure as their age distribution is likely to differ considerably from that in the general population (more students are at the younger end of the 30+ years age-category compared to a more even distribution across ages in the general population – and suicide rates in the general population are highest in late middle age in England & Wales); nevertheless, the incidence of suicide

amongst students in this age group was considerably lower (6.4 vs. 12.4 per 100,000 per year in the general population aged over 30 years).

Characteristics of student suicide deaths: 2012/13 and 2016/17

Characteristics of the student suicide deaths over the last 5 years of the study period are shown in Table 2. In keeping with trends in the general population suicide rates increased with age and were higher in males than females. Risk of suicide was lower amongst black students compared to white students (risk ratio (RR) 0.53 (95%CI 0.32-0.88)).

There was evidence that risk was higher in undergraduate students in their second and subsequent years of study, compared to first years (RR 1.87 (95%CI 1.67-2.09)). However, despite postgraduates being older than undergraduates (only 11% of 21-24 year old students were postgraduates, compared to 48% amongst those aged $\geq$30 years), there was evidence that the rate of suicide in postgraduates was lower (RR 0.72 (95%CI 0.56 to 0.92) =0.006). This reduced risk persisted when the analysis was restricted to those aged <30 years. Gender stratified analysis produced similar findings.

Comparison of suicide methods used and monthly distribution of suicides with general population patterns in those aged <30 years

There was statistical evidence that the methods of suicide used by students differed compared to the general population aged 18-29 years (chi sq. (df 4) 55.36; p<0.001), but the magnitude of the difference, except in relation to jumping, was small. Amongst students 49.9% used hanging (vs. 59.8% in general population), 17.6% poisoning (vs. 17.7%), 8.2% jumping (vs. 4.2%), 3.1% drowning (vs. 3.1%) and 21.1% (vs. 15.3%) used other methods of suicide.

There was evidence that the number of student suicides differed by month (chi sq (11df) 75.40 p<0.001), with the highest number of deaths in January (Figure 3). The number of deaths was lowest between July-September, months when most students are on vacation. There was no evidence that seasonal patterns varied by year of study; in particular there was no evidence of a peak in the number of suicides amongst first year students at the beginning of their studies. Seasonal differences were less marked among postgraduates than undergraduates and did not change over the study period (data not shown).

Sensitivity analyses

When the 169 suicide deaths where the reason for leaving university was given as death were included in the main analysis the student suicide rate showed an average increase of 0.5 deaths per 100,000 per year (web Figure B).

There were only 15 hard-to-code deaths narrative verdict deaths amongst students who died by poisoning or hanging between 2012/13 and 2016/17; nine of these deaths occurred amongst students aged <30 years. Inclusion of these deaths increased the rate estimate for those aged <30 years from 4.0 per 100,000 per year to 4.1 per 100,000 per year.

There was no evidence that a rise in the number of overseas students contributed to the rise in student suicide rates; in 2008/9 and 2009/10, 20/113 (17.7%) student deaths where legal nationality was known were non-UK, the figure was similar in 2015/6 and 2016/17 (29/175 : 16.6%).

Discussion

Main findings

Rates of suicide amongst university students were considerably lower than those in the general population of England and Wales. Nevertheless, in keeping with recent general population trends in 15-19 year olds (Office for National Statistics., 2018a; Bould et al 2019), the incidence of suicide in students increased by 15% between 2009/10 and 2016/17.

Our findings are consistent with national studies of student suicide in the USA (Schwartz., 2011; Silverman et al 1997), which report lower rates of suicide amongst students compared to the general population. Our findings are also consistent with evidence that high educational attainment and IQ – factors increasing the likelihood of getting a place at university - are associated with a reduced risk of suicide (Andersson et al., 2008).

Suicide risk was lower in postgraduates than undergraduates and in black students compared to other ethnic groups. There was a marked excess of student suicides in January, with 14% of all suicides occurring in this month compared to 9% in the general population of a similar age. Reasons for this might include exam pressure around this time, as many universities hold exams in January, or the challenges of returning to studies after the Christmas break. More detailed research is required to better understand this feature of student suicides.

The methods of suicide used by students generally followed the pattern seen in the general population, although there was an excess of suicides by jumping (8.2% vs. 4.2%) in students; this may reflect the fact that most universities are based in cities and large towns with ready access to tall buildings and other man-made structures (Gunnell and Nowers, 1997). In keeping with this finding, data for suicide methods used by USA students indicate that jumping is more commonly used than in the general population of a similar age (Schwartz., 2011).

Strengths and limitations

The linkage included student data spanning a 16-year period, allowing us to investigate long-term trends and giving us sufficient statistical power to investigate differences between

students and non-students in the seasonal distribution of suicide and commonly used methods.

There are several limitations to our analysis. First, we did not have a complete sociodemographic breakdown of the student population spanning the entire period, so some analyses were restricted to the most recent five years. In addition, readily available HESA student population data was grouped by age or sex, but not stratified by age in males and females separately, so we could not age and sex standardise our results. Second, we had no information on mental health service contacts of the students. However, a recent study based on data collected by the National Confidential Inquiry (NCI) into suicide amongst people under psychiatric care identified 214 student suicides between 1997-2012 i.e. approximately 13 per year (Farrell et al., 2017). We identified approximately 78 student suicides per year throughout England and Wales over a similar period, which suggests that around 17% (13/78) were likely to have been in contact with psychiatric services in the year before their death; this may be an under-estimate as the NCI data are based on information provided by psychiatrists completing inquiry forms. Third, it is possible that some relevant deaths were missed during linkage because the date of death was after the end date recorded on the HESA record. Fourth, because of delays in conducting coroners' inquests, and cause of death is not known until the inquest is complete, it is likely that the number of deaths occurring in 2016/17 is underestimated. Fifth, a small number of possible suicide deaths were excluded from our analysis because they were given narrative conclusions by the coroner – inclusion of such deaths in the analysis increased our rate estimates by only 2%. Furthermore, some deaths receiving accident or misadventure conclusions from coroners are thought, on clinical grounds, to be probable suicides (Gunnell et al., 2013); such deaths were not included in the linkage and would require careful clinical review to identify relevant cases.

Findings in the context of the wider literature.

UK studies in the 1950s found evidence of a higher rate of suicide amongst students from some of the long-established UK universities, when compared with national age and gender specific rates (Rook., 1959; Carpenter., 1959; Parnell., 1959). Risk was particularly high in students at Oxford and Cambridge. Similarly, an increased risk compared to the general population was found amongst Japanese students at Kyoto University 1956-80 (Ishii., 1985). Rook speculated that factors such as the stress of transition from school to university,

academic stresses (including fear of exam failure), rises in student numbers putting pressure on tutor support, and parental pressure on their offspring to succeed may contribute to the increased risk for UK students (Rook., 1959). In contrast, a study of Yale students (1920-1955) found no evidence of increased risk compared to the general population (Parish., 1957) as did an analysis of 12 major US universities in the 1980s (Silverman et al., 1997) and a more recent study from the USA (Schwartz., 2011). In keeping with this, recent studies of single institutions in England have found that the rates of suicide in Cambridge (1970-1996) (Collins et al., 2000); and Oxford students (1990-2006) (Hawton et al., 2012a) are no higher than the general population. However, in keeping with the findings of our study, a recent study of suicide amongst Japanese students indicates incidence has increased in recent years (Uchida and Uchida 2017). In all studies, suicide risk was higher amongst male than female students, but in contrast to our findings, Collins' analysis of suicide in Cambridge students found a heightened risk in postgraduate compared to undergraduate students (Collins et al., 2000).

In a recent study of suicides amongst young people in England, sixty of the 18-19 year olds studied were attending further or higher education (university) institutions; common antecedents of their deaths included alcohol misuse (23%), illicit drug misuse (23%), suicide related internet use (17%) social isolation (27%) as well suicidal thoughts (20%) and a diagnosis of mental illness (47%) (National Confidential Inquiry into Suicide and Homicide by People with Mental Illness., 2017). Over a third (38%) of the deaths had evidence of some UK National Health Service (NHS) mental health service contact (National Confidential Inquiry into Suicide and Homicide by People with Mental Illness., 2017).

Few studies have had sufficient statistical power to investigate the seasonal / termly timing of suicide deaths amongst students, although previous authors have speculated about the possible role of exam stress. Analysis of Cambridge and Oxford student suicides showed disproportionately more deaths in term time compared to holidays but no evidence of heighted risk around the time of end-of-year exams (Hawton et al., 2012a; Collins et al., 2000). Neither study investigated month of occurrence of death, although in keeping with the national analysis reported in our analysis, the highest numbers of deaths were in the January-March term. Similarly, in an analysis of suicide deaths in Kyoto, the highest numbers of deaths occurred in February and April (Ishii., 1985). In the recent NCISH study, suicides peaked in April and May (National Confidential Inquiry into Suicide and Homicide by People with Mental Illness., 2017).

In keeping with findings from Japan (Uchida et al., 2017) we found no evidence of a heightened risk of suicide during the first year of study. Indeed, data from Japan indicate that students in later years of study who need to repeat years or who took academic leave of absence were at heightened risk of suicide (Uchida et al., 2017).

Based on National Confidential Inquiry data (Farrell et al., 2017) we crudely estimate that 17% (see earlier) of student suicides are in current or recent contact with psychiatric services (see above). This figure is in line with Japanese data indicating that 16% of students had a psychiatric diagnosis (Uchida et al., 2017) and data from the USA indicating that around a quarter of student suicides were counselling service clients (Schwartz., 2006).

We found a surprisingly high proportion of suicides (42%) occurred amongst students aged ≥30 years. This is considerably higher than reported amongst students from the USA in the 1980s (10%) (Silverman et al., 1997) and in Sweden in 2006-11 (26% for females and 18% for males (Lageborn et al., 2017). This may reflect differences in the age of students attending university in the UK.

Previous research highlights particular risks for students who are struggling with their studies, who fail exams or have to suspend studies due to health or disciplinary issues (Parish., 1957; Stanley et al., 2009). In keeping with suicides in the general population, students who die by suicide have high levels of previous self-harm, drug misuse and contacts with mental health services, and deaths are often triggered by relationships problems, financial difficulties and other life events (Hawton et al., 2012a; National Confidential Inquiry into Suicide and Homicide by People with Mental Illness., 2017; Stanley et al., 2009; Auerbach et al., 2018).

Implications

Our findings highlight the need for the focus of prevention to be on the wider population of young people in general, as well as students. Those who do not attend university may be disadvantaged in a number of ways; they may have serious mental health problems that make it difficult for them to enter higher education; others may struggle with entering the work force and be subject to the financial strains and job insecurity associated with low-skilled employment.

Nevertheless, universities do have an important part to play in mental health improvement, resilience building and suicide prevention. Our findings also point to the importance of

universities focusing some prevention efforts during periods of heightened risk, particularly around January. Adolescence is the peak age of onset of most major mental illness (Kessler et al., 2007) and individuals moving to university may lose supports from friends and families at home. Furthermore, those with pre-existing mental health problems may struggle both with GP registration and linking up with specialist mental health services in their new place of residence (Universities UK., 2017). One approach to overcome difficulties with GP registration is to allow dual registration in their home and university towns to facilitate access and referral to appropriate services.

The university environment provides an important opportunity to promote healthy behaviours and life skills that will help students respond to life's challenges as well as make a successful transition into employment. Universities UK (UUK) have recently developed suicide prevention guidance (Universities UK., 2018), which highlights the challenges faced by students and opportunities for prevention, encouraging universities to adopt a "whole" university approach to mental health.

The heightened risk of suicide by jumping amongst students highlights the importance of universities giving careful consideration to the design and safety measures surrounding potential high-risk locations on their estate and close to their campus.

Further research is needed to better understand the particular stressors affecting students, indicators of risk and how to mitigate them. There have been few robust evaluations of suicide prevention interventions in university settings (Robinson et al., 2018; Harrod et al., 2014) nor of the appropriate level of mental health / counselling services that universities should provide when students have access to standard NHS services. Such research is urgently needed to inform universities on how best to manage the increasing numbers of students with mental health problems.

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Table 1. Number of students and student deaths by suicide 2000/01 to 2016/17 in England and Wales

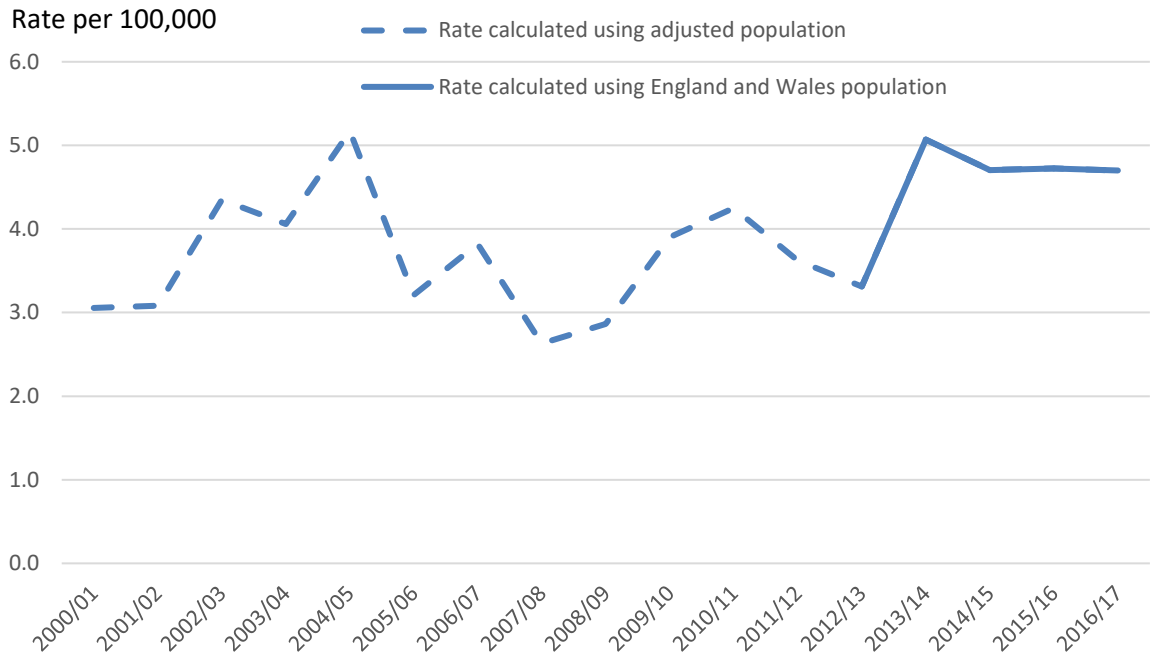
Academic year	student population	deaths
2000/01	1702461	52
2001/02	1784996	55
2002/03	1862361	81
2003/04	1922717	78
2004/05	1953958	101
2005/06	1994031	64
2006/07	2014541	77
2007/08	2015004	53
2008/09	2095232	60
2009/10	2179270	85
2010/11	2187362	93
2011/12	2181791	79
2012/13	2053365	68
2013/14	2012155	102
2014/15	1977060	93
2015/16	1990020	94
2016/17	2021375	95

Table 2: Sociodemographic and university course-related risk factors for student suicide deaths in the academic years 2012/2013 and 2016/17

	No. student person years	No. suicides	Risk ratio*	95%CI	p-value
Age group (years)					
18-20	4004980	111	1.00		
21-24	2703000	134	1.79	1.39-2.30	
25-29	1143120	67	2.11	1.56-2.86	
>30	2201425	140	2.29	1.79-2.94	
					P<0.001
Sex					
Female	5645115	157	1.00		
Male	4407035	295	2.41	1.98-2.92	P<0.001
Ethnicity					
White	6166555	314	1.00		
Black	588250	16	0.53	0.32-0.88	
Asian	856060	46	1.05	0.77-1.44	
Other	409740	24	1.15	0.76-1.74	
					P=0.041
Year of study (undergraduates only)					
First year	2939710	102	1.00		
Second or later year	4750555	308	1.87	1.67-2.09	P<0.001
Level of study all ages					
Undergraduate	7689125	370	1.00		
Postgraduate	2363025	82	0.72	0.56-0.92	P=0.006
<30 years					
Undergraduates	6478450	277	1.00		
Postgraduates	1372650	35	0.60	0.41-0.85	P=0.002

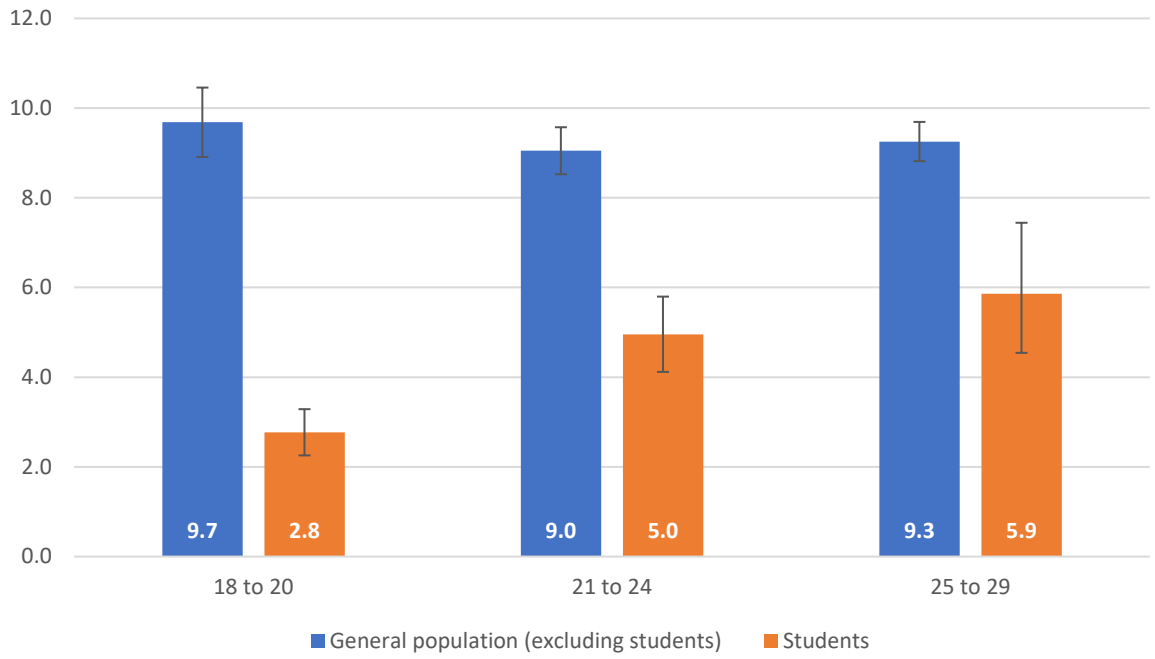
*From Poisson regression.

Figure 1: Rate per 100,000 of University student suicides by year, deaths registered in England and Wales, 2000/01 to 2016/17 amongst students aged 18 years and over[1-5]

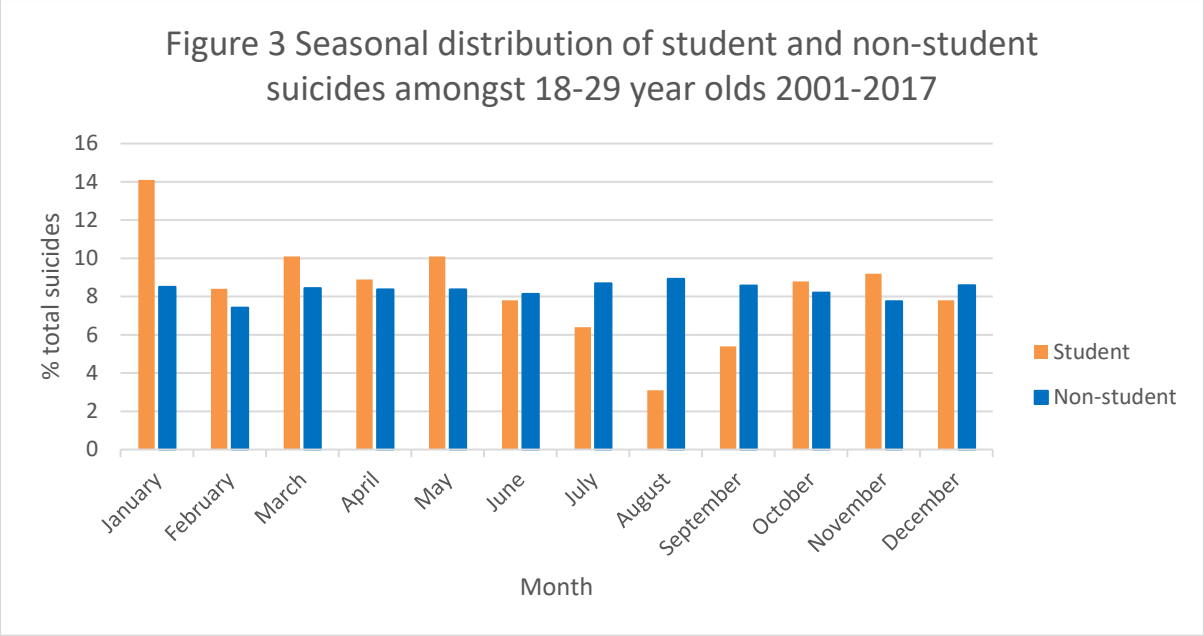


Footnotes: 1. Figures for 2016/17 are provisional. Deaths that occurred in 2017 may not be registered in 2017 due to the length of time it takes to complete a coroner's inquest; 2 Figures are based on the last HESA year the deceased was registered in (i.e. 1st August to 31st July). 3. Crude rates per 100,000 students registered with HESA. UK populations prior to 2012/13 have been used and adjusted to create an England and Wales population. More information can be found in the 'Creating rates for student suicides' section.

Figure 2: Rate of suicide by age group in the general population (not including university students) and in university students; deaths registered in England and Wales, 2012/13 to 2016/17 combined[1-3]

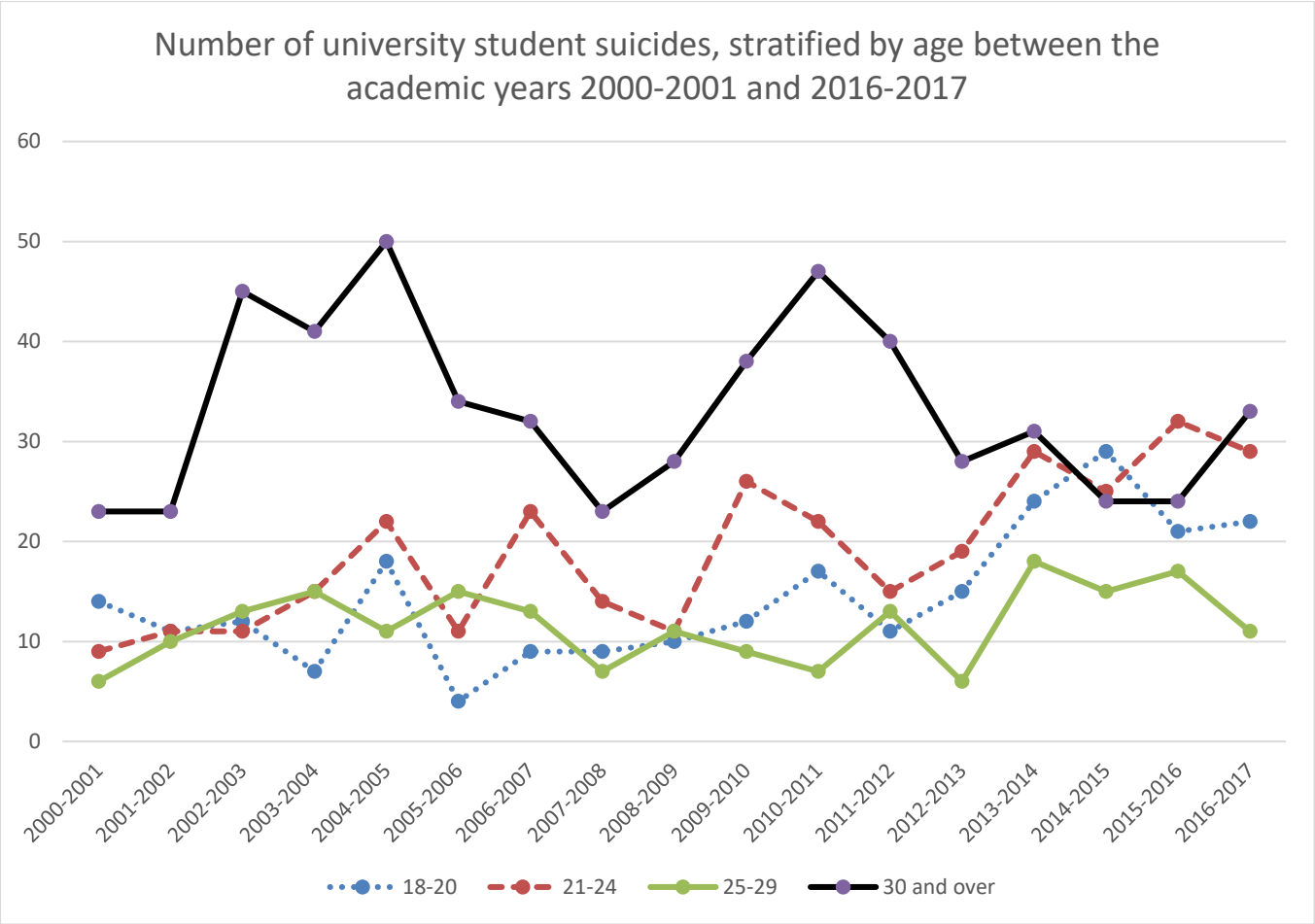


Footnotes: 1. Figures for 2016/17 are provisional. Deaths that occurred in 2017 may not be registered in 2017 due to the length of time it takes to complete a coroner's inquest; 2. Information on degree type and year of study are based on information provided in the student record; 3. Crude rates per 100,000 students registered with HESA



Footnote: 1. Figures for 2016/17 are provisional. Deaths that occurred in 2017 may not be registered in 2017 due to the length of time it takes to complete a coroner's inquest;

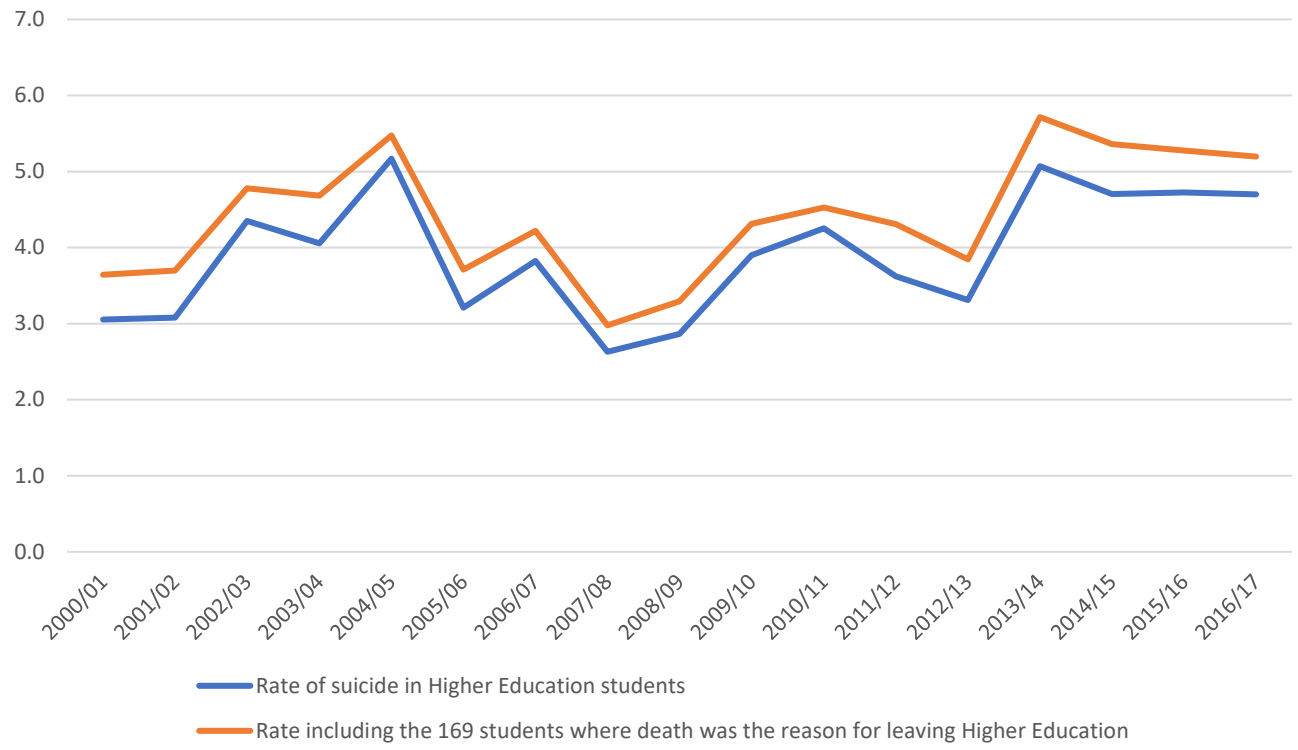
Web Figure A



Footnote: 1. Figures for 2016/17 are provisional. Deaths that occurred in 2017 may not be registered in 2017 due to the length of time it takes to complete a coroner's inquest

Web Figure B

Suicide rate per 100,000 in university students, including 169 students where reason for leaving university was death, deaths registered in England and Wales, 2000/01 to 2016/17[1-4]



Footnote: 1. Figures for 2016/17 are provisional. Deaths that occurred in 2017 may not be registered in 2017 due to the length of time it takes to complete a coroner's inquest, it can take months or even years for a suicide to be registered. 2. Figures are for persons aged 18 and over 3. Figures are based on the last HESA year the deceased was registered in. HESA year is the period of 1st August to 31st July. 4. Crude rates per 100,000 students registered with HESA. UK populations prior to 2012/13 have been used and adjusted to create an England and Wales population.