Hanging (including self-strangulation; hereafter ‘hanging’) is used to refer to both methods) is a relatively common suicidal behaviour with a high fatality rate. Its use has increased substantially in the UK and other countries in the past 30 years. Although most frequent in males, rates of suicide by hanging have also doubled in females in this period. In England and Wales in 2006, 51% of suicides by males and 34% by females involved hanging. We have used a long-standing clinical research database on non-fatal self-harm to investigate: (a) whether the rise in suicides by hanging in the UK is reflected by increases in hospital presentations for non-fatal hanging; (b) the characteristics of individuals who use this method, and especially gender differences; and (c) how individuals who use this method differ in characteristics and outcome from people who present to hospital with self-poisoning, the method used by about 80% of people who self-harm in England.

 Reported denominators for some variables vary because of missing information.

## Results

During the 28-year study period, 166 individuals (121 (72.9%) males and 45 (27.1%) females) presented to the general hospital after non-fatal hanging. They were involved in 191 episodes: 152 involving hanging and 39 strangulation. They were also involved in 440 other episodes of self-harm.

The numbers of episodes involving hanging increased substantially during the study period, especially between 1992 and 2005: 1978–1984, 16/6139 self-harm episodes (0.26%); 1985–1991, 12/6019 episodes (0.20%); 1992–1998, 42/9022 episodes (0.47%); 1999–2005, 121/11 403 episodes (1.06%) ($\chi^2$ for trend $=58.38$, d.f.$=3$, $P<0.001$).

Individuals who presented after non-fatal hanging were predominantly single (94/156; 60.3%). Their ages were: $<15$ years, $n=2$ (1.2%); 15–24 years, $n=36$ (33.7%); 25–34 years, $n=41$ (24.7%); 35–54 years, $n=52$ (31.3%); and 55+ years, $n=15$ (9.0%). More females than males were in current psychiatric care (30/44 (68.2%) v. 52/98 (52.6%); $P=0.001$); had received previous psychiatric care (27/31 (87.1%) v. 31/83 (37.3%); $\chi^2=22.35$, $P<0.001$); were currently psychiatric hospital in-patients (11/44 (25%) v. 6/104 (5.8%); $\chi^2=11.25$, $P=0.001$); and had previously been psychiatric hospital in-patients (18/31 (58.1%) v. 16/82 (19.5%); $\chi^2=15.90$, $P<0.001$). More females had a personality disorder diagnosed (11/16 (68.8%) v. 7/51 (13.7%); $\chi^2=18.77$, $P<0.001$) and had a history of self-harm (34/38 (89.5%) v. 52/98 (53.1%); $\chi^2=15.62$, $P<0.001$). Suicidal intent scores were similar in males (median 15) and females (median 12; Mann–Whitney U, $z=−1.51$, $P=0.13$).

Significant findings from univariate analyses (Table 1) indicate that individuals in the hanging (case) group were more likely than those in the self-poisoning (control) group to be living alone or in an institution and to have high scores (>12) on the Suicidal Intent Scale. They were less likely than the controls to have consumed alcohol during the 6 h before or at the time of self-harm. Multivariate analysis including all significant variables demonstrated that high suicidal intent (odds ratio (OR) =3.28, 95% CI 1.62–6.63) and less frequent use of alcohol in the act (OR=0.34, 95% CI 0.14–0.84) independently distinguished the case group from the controls.

## Method

Information on non-fatal self-harm presentations to the general hospital in Oxford between 1978 and 2005 was collected through the Oxford Monitoring System for Attempted Suicide. Self-harm is defined as intentional self-poisoning or self-injury, irrespective of motivation or degree of suicidal intent.

Data were collected by clinicians from the hospital psychiatric service using special recording forms after they had conducted psychosocial assessments, and by scrutiny of the emergency department and other clinical records by research staff for patients not seen by the service. Information used for this study included age, gender, living circumstances, alcohol use 6 h before or at the time of the act, previous and current psychiatric care, alcohol and drug misuse, psychiatric and personality disorder, previous self-harm, and suicidal intent (from 1993) using the Beck Suicidal Intent Scale.

We selected two self-poisoning controls for each hanging case. They were matched for gender, age, approximate date of presentation, whether or not a psychosocial assessment had been conducted, and residence in Oxfordshire. Information on deaths was available from the Office for National Statistics until the end of 2000 on patients who presented between 1978 and 1997.

Statistical analyses were conducted using Stata version 9 for Windows and conditional logistic regression for comparing matched case–control groups.

## Declaration of interest

None. Funding detailed in Acknowledgements.
Deaths in the follow-up period occurred in 12/52 (23.1%) of the case group and 12/74 (16.2%); $\chi^2=0.54$, not significant) of the controls who presented between 1978 and 1997 and were followed-up until the end of 2000. Death by suicide (including undetermined and accidental poisoning verdicts) was more frequent in the case group than in the controls (5/52, 9.6% v. 0/74, 0.0%; Fisher’s exact test, $P=0.011$). Of the suicides in the case group, one involved hanging.

### Discussion

A major increase in general hospital presentations was found for non-fatal hanging and self-strangulation, especially in recent years. This has paralleled the large increase in hanging as a method of suicide in the general population in the UK. The reasons for this are unclear. It is a major concern as prevention of hanging is associated with these acts involving higher suicidal intent and possibly lower impulsivity. The long-term risk of death from suicide appears to be greater in individuals using hanging for self-harm.

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### References


General hospital presentations of non-fatal hanging over a 28-year period: case-control study
Keith Hawton, Helen Bergen, Deborah Casey and Sue Simkin
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