Variation in deliberate self-harm around Christmas and New Year
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Abstract
Seasonal and temporal variations in suicide by patient and demographic groups, though important, have been investigated infrequently. This study examined patterns of non-fatal deliberate self-harm (DSH) during Christmas and New Year (from December 16th to January 6th) by specific patient and demographic group. The sample comprised 19,346 people who presented with 31,369 episodes of DSH to a general hospital Emergency Department in Oxford, UK. Autoregression analysis of all episodes from 1976 to 2003 (controlling for day of the week, month and year) revealed significant reductions (−30% to −40%) in the occurrence of DSH compared with expected numbers on each day from December 19th to 26th (except the 23rd), though no significant increase was found on any of the subsequent 11 days. When analysed separately, young people aged under 25 years showed decreases (−60%) in the occurrence of DSH on several days throughout Christmas (p<0.001) and New Year (p<0.01). Patients with partner relationship problems showed a decrease 3 days before Christmas Day (−80%, p<0.001) and an increase on New Year’s Day (+100%, p<0.01). Patients with family relationship problems showed decreases before Christmas and after New Year (−60%, p<0.01). Patients with social isolation problems, or a previous history of DSH showed decreases (−60%, p<0.01) before Christmas only. Patients who used alcohol at the time of DSH or in the 6 h beforehand, but did not chronically misuse alcohol, showed an increase (+250%, p<0.01) on New Year’s Day. There was no significant variation in the occurrence of DSH for patient groups with either low/medium or high suicide intent. The findings elucidate how social and individual factors may interact in contributing to DSH. They are of theoretical interest, and have important clinical implications regarding identification of patient groups especially susceptible to DSH at New Year.

Keywords: UK; Deliberate self-harm; Holidays; Seasonal variation; Christmas; New Year

Introduction
Seasonal and temporal variations in completed suicide have been the subject of extensive investigation (Altamura, VanGastel, Pioli, Mannu, & Maes, 1999; Chew & McCleary, 1995; Kevan, 1980; Preti, Miotto, & Coppi, 2000). One interesting aspect of these phenomena is variation during the Christmas and New Year holiday period. There is a popular misconception that suicide rates increase at Christmas, whereas overall rates of suicide and suicidal behaviour generally decline around Christmas (Carly & Hamilton, 2004). This misconception appears to have been promulgated by the media (Romer, Jamieson, Holtschlag, Mebrathu, & Hall Jamieson, 2003). An analysis of Danish suicides

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from 1989 to 1996 showed that rates were 30% less than expected on Christmas Eve, 20% less than expected on Christmas Day, and nearly 30% greater than expected on January 2nd (Jessen & Jensen, 1999). Swiss mortality data for 1969–1994 showed December to have 10% fewer suicides than the yearly average, with the lowest rates on December 23rd, 25th and 30th, followed by a return to average levels in January (Ajdacic-Gross et al., 2003).

Similar trends were observed in the patterns of attempted suicide around major public holidays in several countries in Europe, with fewer attempts than expected before Christmas and nearly 40% more than expected after, especially on New Year’s Day (Jessen et al., 1999). Only major holidays such as Christmas and Easter showed these effects. Monthly and seasonal variation in ‘parasuicide’ by self-poisoning in Scotland between 1969 and 1987, especially a winter trough attributed to the effect of Christmas, was evident in women but not men (Masterton, 1991). Other reports from England of deliberate self-harm (DSH) on Valentine’s Day and Christmas Day have shown inconsistent results (Cullum et al., 2006; Davenport & Birtle, 1990), but have been limited by small sample sizes and unreliable methodology, with no adjustment for known seasonal and weekly variation.

Differing patterns have also been observed depending on the type of holiday. Analysis of trends in suicides over a 7-year period in the USA (Phillips & Wills, 1987) showed a low risk before and a high risk after New Year’s Day, July 4th (Independence Day) and Labour Day (type-1 holidays). The authors surmised that this was a holiday where friends gathered or visited briefly, but did not stay over. In contrast, a low risk of suicide was seen before, during and after Christmas, Memorial Day and Thanksgiving (type-2 holidays), when relatives were likely to visit, and the nuclear family became an extended family for a longer period. When analysed separately, Whites, Blacks, males, females, persons of working age, and retired people all exhibited a decline in suicide rates around the holiday periods combined. Only the age group 0–19 years showed a non-significant increase in suicide around the holidays.

Differences by gender were found in Hungary where decreased rates of suicide before Christmas occurred in males but not females (Bozsonyi, Veres, & Zonda, 2005), and in Lithuania where increased rates occurred after major public holidays in males but not females (Kalediene & Petrauskiene, 2004).

Although there is some consistency in overall trends in suicide and DSH in relation to holidays, trends by specific demographic and patient group (other than gender) have, to our knowledge, not been investigated. It is probable that many people will have positive expectations and experience of the holiday, others will have negative stresses and disappointments, some people will have both. Different effects might be expected for different age groups, especially as very young and very old age groups show different seasonal patterns of suicide (Chew & McCleary, 1994). It is known that poor social integration at the family and community level independent of mental disorder and employment status (Duberstein et al., 2004), and alcohol use (Haw, Hawton, Casey, Bale, & Shepherd, 2005; Rossow, 1993) increase the risk of suicide and attempted suicide. It is unknown how these factors have an impact on suicidal behaviour during a major holiday period. In people who made repeated serious suicide attempts, the severity of their act was found to increase and relation to external triggers diminish (Joiner & Rudd, 2000). It might therefore be expected that people who repeatedly self-harm and people with serious suicide intent may be relatively unaffected by the holiday.

Previous analyses of attempted suicide around holidays have been based on episodes rather than persons. This may be of interest for hospital and emergency department management. However, in order to relate findings to characteristics of patients, and to make interpretations regarding social integration, for example, person-based analyses are required. This information may increase our understanding of the mechanisms involved, and have important implications for preventive interventions in particular groups of people who self-harm.

The aim of this study was to examine the pattern of DSH in the days surrounding Christmas and New Year by people who presented with DSH to a general hospital Emergency Department. Specifically, we used subgroup analyses to investigate hypotheses (shown in brackets) regarding the occurrence of DSH during the holiday period by (i) gender (males and females will show similar patterns); (ii) age (younger ages will show decreases, older ages will show increases); (iii) previous history of DSH (decrease in those with no history, no variation in those with previous history); (iv) alcohol use and misuse (both will show increases); (iv) problems in partner relationships, family relationships, and of social isolation (all will show increases); (v) and level of suicide intent (low/
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