Likelihood of later hospital admission for deliberate self-harm may be influenced by various risk factors in young people smoking

Question: What are the risk factors in young people for episodes of deliberate self-harm (DSH) requiring hospital admission?

People: 2736 young people aged 4–16 years, identified from the Western Australian Child Health Survey (WACHS). This cross-sectional household survey involved face to face interview of children and their primary carers, and paper-based questionnaires sent to the children's current school. Data from a number of domains were collected, including characteristics of the child, carer, family, school and community. Insufficient numbers of aboriginal children living in Perth were identified for the analysis, and those living outside the Perth Metropolitan area were excluded from the study.

Setting: Perth, Western Australia; July 1993 to December 2007.

Risk factors: Individual child characteristics (eg, gender, extent of behavioural or emotional problems using the Achenbach's Child Behaviour Checklist); primary carer characteristics (eg, smoking status of primary carer); family level characteristics (eg, age of mother at child's birth, consistency of parenting style, family type, family income and family functioning using the McMaster Family Assessment Device); school characteristics (eg, child's academic performance rated by the teacher); and community characteristics (eg, urban or rural, socioeconomic disadvantage index). Multivariate proportional hazards modelling to identify independent risk factors associated with increased likelihood of subsequent hospital admission for DSH.

Outcomes: DSH cases of sufficient severity to require hospital admission for treatment. Cases that were treatable in outpatient or emergency room settings were excluded, as were cases of harm of undetermined intent. DSH cases prior to 1 July 1999 were defined according to ICD-9-CM (codes E950-E959.9); cases after this date were defined according to ICD-10-AM (codes X60-X84.99). Cases were identified by record linkage between the WACHS and the Western Australian Data Linkage System, which includes hospital admissions data.

METHODS

Design: Retrospective cohort study (linking cross-sectional survey data with hospital administrative records).

Follow-up period: 14 years.

MAIN RESULTS

Among the survey participants, 46 cases of DSH resulting in hospital admission were detected, arising from 37 young people (1.4%), with a median age of 18 at first admission. Multivariate analysis identified a number of independent risk factors for subsequent DSH requiring hospital admission: female sex (HR 3.53, 95% CI 1.69 to 7.38, p<0.001), primary carer a smoker at time of initial survey (HR 3.02, 95% CI 1.53 to 5.95, p<0.01), step/blended family (compared with original family HR 2.28, 95% CI 1.01 to 5.15, p<0.05), having more emotional problems than other children (compared with having none HR 3.47, 95% CI 1.65 to 7.31, p<0.01), inconsistent parenting (compared with encouraging parenting HR 2.31, 95% CI 1.03 to 5.18, p<0.05) and maternal age of less than 20 at child's birth (HR 2.70, 95% CI 1.20 to 6.06, p<0.05). Additional risk factors shown to have no association with hospitalisation for DSH included birth weight, combined carer income, carer education, lifetime treatment of a carer or child for a mental health problem, breastfeeding status, child's IQ and academic performance and socioeconomic disadvantage.

CONCLUSIONS

A number of risk factors measured at baseline in young people were identified as independent predictors of subsequent hospitalisation for DSH. Some of these factors have been identified in previous studies, with care smoking being a novel factor associated with hospitalisation for DSH.

ABSTRACTED FROM

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COMMENTARY

The study by Mitrou and colleagues, which reports on the associations between hospital admission for deliberate self-harm (DSH) and socioecological factors by linking cross-sectional survey data to health service utilisation data over a 14-year follow-up period, is to be welcomed. One of the unique aspects of their data linkage is that DSH involving admission to hospital was the outcome variable. There are some studies that begin with the DSH sample and use data linkage to examine outcomes, including mortality, among participants over a follow-up period. These would be largely Scandinavian[1] and also UK studies.[2] Another strength of the present study is that the Western Australia Data Linkage System, a database of linked hospital and other health system records, that provides the outcome variable is well established. The main limitation of this study, however, is that only hospital admission data were used to identify self-harm cases, which as the authors themselves acknowledge, probably limits their study to more severe cases of DSH that required hospitalisation. In Ireland, where the National Registry of Deliberate Self Harm records all hospital presentations due to DSH, only a minority (about 40%) of DSH patients become inpatients, and although the rate of admission varies by the type of self-harm involved, the variation by hospital is most striking.[3] Although Mitrou and colleagues point out that more serious cases of DSH are likely to result in hospital admission, omission of self-harmers who were not admitted has likely limited the scope of the current study to a heterogeneous and non-representative sample of self-harm patients.

The study confirmed a number of risk factors for DSH that were previously established. Their finding of an independent association between primary carer smoking and hospital admission for self-harm by their children is particularly interesting and is likely to be due to a number of other underlying risk factors including mental health problems and socioeconomic deprivation. The association is certainly worthy of further investigation. It may be too premature to suggest that an independent association with carer smoking will provoke a rethink of clinical practice. For now, the implications seem more relevant from a public health perspective.

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