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TITLE:

How can we reduce suicide after hospital-treated self-harm in young people?

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Reducing suicide following hospital-treated self-harm in young people

Suicide and self-harm (defined as intentional, non-fatal self-poisoning or self-injury, irrespective of suicidal intent)[1] are major contributors to morbidity and mortality in young people globally.[2] The incidence of self-harm in young people is rising in the UK[3] and Australia,[4] and it is now well-established that young people with a history of self-harm are at markedly increased risk of adverse non-fatal and fatal outcomes.[5,6] However, relatively few studies[6] have examined the relationship between child and adolescent emergency department (ED) presentations for self-harm and subsequent mortality. In this context, Keith Hawton and colleagues' longitudinal study[7] in this edition of *The Lancet Child & Adolescent Health* provides new insights into the longer-term association between hospital treated self-harm and premature mortality, including suicide.

Hawton et al.[7] linked data from the Multicentre Study of Self-harm in England with mortality data from the Office for National Statistics to investigate the risk of death in 9,173 young people aged 10-18 years who presented to one of five EDs in England following self-harm between 2000 and 2013. They found that almost half of all deaths in the cohort (55/124; 44%) were due to suicide, with males and those who reported self-injury at the greatest risk. Additionally, the incidence of suicide in the 12 months following ED presentation was 30 times higher than that expected in UK residents aged 12-18 years. The authors' use of linked mortality data, large sample size, and follow-up period of up to 16 years add strength to the study's findings.

Although this study strengthens the evidence base regarding the association between self-harm and suicide, it also raises additional important questions. Why were males more likely than females to die by suicide? Of the males who died by suicide, how did their post-ED clinical care pathways differ from males who died from other causes, and from the pathways of those who did not die? The answers to these questions could better inform the nature and timing of interventions designed to prevent suicide following ED presentation, the critical next piece of the puzzle. Additionally, most suicides (77%) occurred after the age of 18 years, when many young people make the transition from child and adolescent mental health services (CAMHS) to adult mental health services. Whilst the reasons for this finding are likely both numerous and multi-factorial, a sub-optimal transition between these services may contribute to some young people 'slipping through the cracks' and disengaging from vital health and social services (including mental health and substance use treatment, and employment and housing services), thereby increasing their risk of suicide.

As Hawton et al. noted, their study involved a relatively small number of suicides (n=55) and a previous history of self-harm was not obtained for a significant minority (41%) of the overall sample. Additionally,

given that most self-harm in young people does not lead to medical help-seeking,[8] the findings cannot meaningfully be extrapolated to the much larger cohort of young people who self-harm in the community and do not present to the ED. Despite these factors, the study's findings have considerable public health implications and can inform interventions to assist the cohort of young people who do present to emergency services following self-harm. Evidence for interventions to support children and adolescents who self-harm – including utilising ED presentations as a critical window to implement a comprehensive psychosocial risk assessment and link young people with outpatient mental health services – is beginning to emerge.[9] Whilst non-pharmacological interventions designed to reduce subsequent self-harm and suicide attempts appear promising,[10] adequately powered, multi-site, and rigorously conducted randomised controlled trials are urgently needed to evaluate the effectiveness and cost-effectiveness of such interventions. These interventions could be trialled with adolescents presenting to the ED, providing a focal point in the healthcare system to identify and inform efforts to reduce adolescent suicide. Ideally, such trials would combine rich baseline and follow-up survey data with person-level, linked administrative health service and mortality data, thereby highlighting the patterns and predictors of health and social service utilisation, health trajectories, and mortality in this vulnerable population.

Self-harm in young people is frequently a marker for concurrent risk behaviours that pose considerable hazards for social and emotional development through young adulthood and beyond.[5] Hawton et al.'s findings add weight to the argument that self-harm in young people is not merely a passing phase, and demonstrate that the elevated risk of premature death is both real and enduring. Timely responses to mitigate this risk will require social scaffolding and support for young people and their families, their schools, their workplaces, and their peers. This will require commensurate coordinated policy and practice efforts across the health, education and social care sectors. Given the well documented social gradient in health,[11] evidence-informed efforts to reduce adolescent self-harm will disproportionately benefit vulnerable sub-groups of young people, thus directly addressing the Sustainable Development Goal of reducing inequalities.

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