The role of primary care in the prevention of suicide and accidental deaths among young men: an epidemiological study

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SUMMARY

Background: *Despite generally falling mortality and suicide rates, among young men the rates of violent death from accidents and suicide continue to rise. Most research has focused upon suicide, and the potential for effective interventions, particularly in primary care, remains controversial.*

Aims: *To compare health service contacts prior to suicidal and accidental deaths among young men.*

Design of study*: Examination of inquest data, postmortem and toxicology reports, and general practitioner (GP) and hospital records.*

Setting: *All sudden, unexpected, violent or unnatural deaths involving young men aged between 15 and 39 years and reported to the four coroner's offices of Merseyside and Cheshire during 1995.*

Method: *We compared data on the timing and nature of final GP contacts before death among young men with a verdict of accident or misadventure and suicide or undetermined death.*

Results: *Out of a total of 268 violent deaths, 130 received verdicts of accident/misadventure and 97 received verdicts of suicide/undetermined death. Information on the final contact with a GP was available for 172 deaths. Although there was a significant difference between the proportion of suicide cases (56%) and that of cases of accidental death (41%) who had seen their GP during the 3 months before death, this was not significant at 1 month (38% versus 30%, respectively). Suicide cases were more likely to have seen a mental health professional at some time (27% for suicides versus 13% for accidental deaths).*

Conclusion: *These findings confirm that relatively few young men consult their GP during the period before death from suicide or accidents. Prevention strategies must extend beyond suicide risk assessment, and consider ways to encourage young men to consult GPs when they are experiencing emotional distress or problems related to mental health or substance misuse.*

Keywords: *accident; accident prevention; men; prevention; primary health care; suicide.*

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Introduction

MORTALITY rates from suicide continue to rise for younger men in the United Kingdom (UK), against the trend of gradual decreases for women and older men.[1] Although suicide prevention remains a key public health target internationally, the means of achieving this, especially among young men, remains controversial.[2-4] Research into clinical interventions mainly focuses on the quality and content of specialist care,[5-8] risk factors,[5,8-15] and the opportunities for professional risk assessment.[2,16] Estimates suggest that patient suicide is a relatively rare event for general practitioners (GPs), occurring every 4–7 years, with pre-suicide contact occurring once every decade, on average.[4,17]

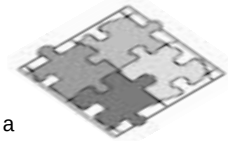
Models of suicide risk

Researchers have sought to identify factors that suggest an increased risk of suicide. Many studies have confirmed the high incidence of mental health problems, particularly depression, although recent studies suggest that this is significantly lower among younger people and men who commit suicide.[9,12] Other important risk factors include alcohol misuse, drug misuse, history of previous self-harm, unemployment (particularly in cases of suicide involving younger people), social isolation, and recent interpersonal stress.[5,8,9,11,13-15] However, most studies have investigated these factors among suicide patients alone, without case controls.[2,16] Recognising these risk factors, particularly among young men who may be relatively reluctant to seek health service support or disclose emotional distress, presents a considerable challenge to GPs.[18] It may be particularly important to identify at-risk men early. In a Finnish study, 62% of women who committed suicide had a history of unsuccessful attempts, whereas 62% of men completed suicide at their first attempt.[19]

Opportunities to assess risk

Risk assessment and targeted intervention among those with suicidal intentions present a key opportunity for health service involvement in suicide prevention. Over the past four decades, researchers in a number of countries have studied the pattern of consultations with primary care and specialist mental health workers prior to suicide. The proportion of people who successfully committed suicide who were ever in contact with specialist mental health workers, reported in studies, ranges from 39% to 63%, with 4–21% in contact within the last 3 months of life (studies confined to populations of specialist patients alone are not included in these figures), and 7–28% (mean = 19%) in contact during

HOW THIS FITS IN



What do we know?

Suicides and accidental deaths, particularly among young men, remain a considerable public health challenge. Researchers disagree about the potential role of general practitioners (GPs) in intervening to reduce risk.

What does this paper add?

This study compares the timing and content of GP contacts before violent deaths among young men. Most men did not consult their GP within three months of death. Prevention strategies need to look beyond suicide risk assessment, to focus on ways to encourage men to consult GPs when they experience emotional distress or have problems related to mental health or substance misuse that increase their risk of violent death.

the final month of life.[2,16] Studies report that the proportion of suicide cases in which patients were in contact with community-based health professionals within the 3 months prior to death range from 15% to 73%, and from 20% to 70% during the final month of life, with an overall average of 45%,[16] but figures for people aged under 35 years (range = 10–36%, mean = 23%) are lower.[2,12,14,20,21] Although Appleby *et al*[22] noted a tendency for the frequency of GP contacts to crescendo before suicide in young people, other studies have not confirmed this. Indeed, there is evidence that the proportion of suicide cases in which patients see their GP during the month before death, particularly those without an established psychiatric history, is no higher than for matched controls.[10,14] Furthermore, there is evidence that even when seen by a specialist mental health professional in the month before suicide, relatively few patients (22%) admit to suicidal intent, and the figures for non-specialist contacts are even lower (4%).[17,23,24] The opportunity for accurate risk assessment more than 3 months before suicide is reduced as mood states and personal circumstances vary.[17]

Accidental deaths

In many countries, accidental injuries are the most common cause of death among young adults.[25,26] There is extensive evidence that men have higher death rates than women for most common causes of death, including accidents, and that they tend to die younger.[27] With regard to accidents, many studies demonstrate that men are significantly more likely than women to engage in a range of risky behaviours.[27] There is little evidence of extensive accident prevention initiatives within UK primary care services, or optimism that such initiatives would be successful.[25]

Aims of the study

We were interested in the potential for suicide and accident risk assessment and prevention strategies for young men, based on opportunistic and planned clinical contacts, particularly with GPs. In addition, we sought to compare the timing and reason for health service contacts prior to death from an external cause among men aged 15–39 years, as this is the group whose suicide rate continues to rise, and for whom accidents are the commonest cause of death.[1]

Method

We examined coroners' inquest data, and postmortem and toxicology reports for all sudden, unexpected, violent or unnatural deaths reported to the four coroner's offices of Merseyside and Cheshire during 1995 and involving young men aged between 15 and 39 years.

Retrospective mortality studies of this nature generally rely on coroners' reports as primary data sources. Although it has been argued that under-reporting and misclassification can affect the reliability of mortality data, all violent deaths are investigated by a postmortem and usually also a coroner's inquest in the UK. Therefore, it is a relatively reliable framework for investigating violent death among young people. A number of studies have also utilised additional information sources, especially health service information, to increase the quality of the available data.[14,28,29] Some important aspects of the suicidal process can be investigated using coroners' inquest notes supplemented by medical records,[14] and procedures such as these are useful for identifying important issues concerning the assessment and management of suicide and unexpected deaths.

As it may take a number of years for a final verdict to be reached, we chose the year 1995 in order to ensure a sufficient lead time between death and the final verdict.[22] Ethical approval was sought from and granted by the ethics committees covering the districts of Merseyside and Cheshire (Aintree, Chester, East Cheshire, Halton, Liverpool, mid-Cheshire, Southport and Formby, St Helens and Knowsley, Warrington, and Wirral). We extracted data on many variables, including method of death, verdict, history of alcohol and drug use, witness statements, cause of death as recorded on the death certificate, disease pathology, toxicology and pathologists' notes. (For the majority of cases, information on illegal drug use or alcohol abuse was provided in statements submitted to the coroner by friends and family of the deceased. In addition, information was often supplied to the coroner by the deceased's GP.) We also conducted a search of GP and hospital records for number of visits, dates of and reasons for visits, clinical problems discussed, and treatments prescribed. We compared the data for deaths that received a verdict of accident or misadventure with those for deaths considered to be suicides or of undetermined cause (recent major studies of suicide include undetermined/open verdicts with suicide, as this group covers borderline cases where there was uncertainty as to whether there was suicidal intent[1,5,30]). We used the χ^2 test to examine the differences between accident and suicide/undetermined deaths.

Results

Sample

Over the study period there were 268 sudden, unexpected, violent or unnatural deaths of young men aged 15–39 years, all of which were investigated by the four coroner's offices of Merseyside and Cheshire. Of these, 130 cases

Table 1. Summary of health service contacts among men with verdicts of accidental death or suicide/undetermined death.

Contact	Accidental death *n* (%)	Suicide/undetermined death *n* (%)	χ^2	*P*-value
Saw GP in final month	28 (30)	30 (38)	0.956	0.328
Saw GP in final 3 months	38 (41)	45 (56)	3.83	0.05
Ever had contact with specialist mental health worker	12 (13)	22 (27)	5.639	0.014

received verdicts of accidental death or misadventure, and 97 received verdicts of suicide or undetermined death. The remaining 41 cases were deaths owing to homicide (n = 23) or attributed 'other' verdicts, and were excluded from the analyses. Among the 227 cases that remained in our sample, one case could not be identified, and GP notes and information on the last contact were missing or incorrect in a further 54 cases. Suicide and undetermined cases were combined, as there is some under-recording of suicide deaths and it is likely that most such deaths among adults are cases where suicide may have occurred but was not proven.[31] This gave a final sample consisting of 92 cases of accident or misadventure and 80 cases of suicide or undetermined death. We compared the proportions of accident/misadventure cases and suicide/undetermined cases in which the patient saw their GP in the final month or 3 months before death, or had ever been seen by a specialist mental health worker. These results are summarised in Table 1.

Our results show that in cases of suicide/undetermined verdict, patients were significantly more likely to have seen their GP during the 3 months prior to their death, although this still represents a relatively low proportion. There was no significant difference between the proportions of accident/misadventure cases and suicide/undetermined cases in which patients had seen their GP in the final month before their death. Verdicts of suicide and undetermined death were more common among those with a history of contact with specialist mental health workers, but this factor might itself have influenced the coroners' verdicts.

Furthermore, when analyses were performed separately for those who had ever had contact with psychiatric services and those who had not, among those who had a history of such contact there was no significant difference between cases of accidental death and suicide/undetermined deaths with regard to GP contact 1 month before death (P = 0.6) or 3 months before death (Fisher's exact test: P = 0.292). However, among those who had no known contact with psychiatric services, the differences were significant at 3 months (P = 0.016) but not at 1 month before death (P = 0.276).

We compared the content of final GP consultations up to 3 months before death as recorded in the GP notes. Among the 83 cases, we were able to ascertain details of 73 final consultations (in the other 10 cases only the date of the consultation was recorded). Among the 35 men with a verdict of accidental death, the final consultation mainly concerned a physical problem in 15 cases, it concerned psychological problems in five cases and alcohol and/or drug problems in 15 cases, whereas among the 37 men with subsequent verdicts of suicide or undetermined death the final consultation concerned a physical problem in 17 cases, psychological problems in 16 cases and alcohol and/or drug problems in five cases (χ^2 = 10.8, P = 0.005).

Discussion

Summary of main findings

Despite a decade of targets to reduce it,[41,42] the suicide rate among young men continues to rise. Our results suggest that although young men who complete suicide may be more likely than those who die in accidents to see their GP during the final 3 months before death, more than half of them had no such contact during this period. Furthermore, even fewer saw their GP during the final month before death, when an intervention and risk assessment might have had more impact on outcome. Similarly, the relatively low proportion of GP contacts in the period before accidental death suggests that strategies to reduce the latter also need to look beyond pre-event risk assessment and advice. When analyses were performed for those known to have had contact with psychiatric services, the results were no longer significant at either 1 month or 3 months before death. One possible explanation for this finding could be that psychiatric referral may shift young men's expectations of mental health support away from primary care. To test this hypothesis further, it would be necessary to ascertain whether they sought specialist psychiatric support instead of accessing primary care. These data were unavailable to the present study.

Strengths and limitations of the study

Our study population covered urban, inner-city and rural populations, including some areas that have a particularly high incidence of substance misuse problems. However, it is possible that the patterns of death and consultation may differ from those in other areas. Our study was restricted to all deaths in a relatively large and mixed population area in a single year, but there is no evidence to suggest that it was untypical. Although our data collection for these deaths was comprehensive, it was retrospective and reliant on the accuracy and detail of other individuals. Data from GP records were sometimes missing and usually very brief, which prevented detailed analysis and reduced our sample size, but it was possible to ascertain the main recorded problem for the majority of final GP consultations. Although previous contact with a mental health specialist was more common for cases with a verdict of suicide/undetermined death, this contact may itself have been regarded as evidence of a mental health problem and thus influenced the coroner's

verdict, and illustrates how the factors that determine coroners' decisions may introduce inconsistencies. This may reduce the robustness of retrospective epidemiological research with comparisons based upon verdict.[32] Future studies may also need to consider using a larger sample, either by conducting the research in a larger area or by analysing data that cover a longer time period.

Comparison with other research

In the light of existing evidence of risk factors for suicide, researchers have suggested that GPs have a key role in identifying those at risk of suicide, and have called for training to increase their sensitivity to clues about mental health problems and personal distress, and their confidence in assessing risk and negotiating appropriate management options with their patients.[2,9,11,12,16,22,23] It may be that GPs are failing to recognise mental health problems, particularly among young men, and therefore do not have the opportunity to intervene and to monitor their progress and risk. However, it has been shown that psychiatrists find suicide prediction and prevention difficult,[7] and the available evidence suggests that training GPs to detect mental health problems, although feasible, has a limited impact on both the healthcare teams and their patients who are most at risk,[34-37] and that young men in particular are less likely to be seen before suicide.[2,4,10,17,21]

Research suggests that mental illness, unemployment, substance misuse, social exclusion, and risk-taking are all related to the expression of masculinity and are linked to external causes of death among young men.[26,27,38] Although the expansion of substance misuse services in primary care may facilitate contact with some of those who are most at risk, the social exclusion of others extends to their relatively infrequent contact with primary care. Indeed, among our total cohort, 31 (12%) men had no record of registration with a GP. Men are less likely than women to attend their GP for screening and prevention interventions, or to seek professional help for health problems.[18,27] In our study, relatively few young male accident or suicide victims consulted health professionals within a realistic time frame for effective risk screening or intervention. If we are to reduce the number of deaths among younger men, interventions will need to access proactively those who are unlikely to seek help from a GP in conventional ways, in addition to raising awareness when seeing patients who are most at risk.[5,22,39] This is particularly challenging in relation to young men, whose behaviour is traditionally often viewed as less acceptable within a surgery owing to mental health problems, aggression or substance misuse problems, and who may not see primary health care as relevant to their lives. Studies, focusing on patients' views of interventions, have ranked social support, psychiatric services, counselling, medication, and information as most helpful.[3,40]

Implications for future research and practice

A greater understanding is needed of the ways in which young men make decisions about risk, particularly in relation to potentially lethal activities, such as drug use. More research is also required to increase our understanding of the reasons why young men, especially those who are marginalised, are reluctant to access the available health and social services, or do access those services but fail to articulate their health needs. Future research should explore ways to encourage young men to access services, and should examine how those services can be modified to encourage young men to use them.

Prevention strategies will need to look beyond traditional practice-based services and consider ways to reduce deaths from accidents as well as from suicide, particularly among young men. We should seek to inform young men in particular about sources of help for personal distress and emotional difficulties, and provide information about accident risk, while equipping healthcare staff with the skills, knowledge, and resources necessary to assess, inform, counsel, and manage them. However, despite expectations that improved health services would reduce the number of suicides and accidental deaths, our research adds to an increasing body of evidence that suggests that health services can, at best, play only a limited role in achieving this, even with enhanced resources.

References

1. Kelly S, Bunting J. Trends in suicide in England and Wales, 1982–1996. *Popul Trends* 1998; **92:** 29-41.
2. Luoma JB, Martin CE, Pearson JL. Contact with mental health and primary care providers before suicide: a review of the evidence. *Am J Psychiatry* 2002; **159:** 909-916.
3. Eagles JM, Carson DP, Begg A, Naji SA. Suicide prevention: a study of patients' views. *Br J Psychiatry* 2003; **182:** 261-265.
4. Gunnell D, Frankel S. Prevention of suicide: aspirations and evidence. *BMJ* 1994; **308:** 1227-1233.
5. Appleby L, Shaw J, Amos T, *et al*. Suicide within 12 months of contact with mental health services: national clinical survey. *BMJ* 1999; **318:** 1235-1239.
6. Burgess P, Pirkis J, Morton J, Croke E. Lessons from a comprehensive clinical audit of users of psychiatric services who committed suicide. *Psychiatr Serv* 2000; **51:** 1555-1560.
7. Eagles JM, Klein S, Gray NM, *et al*. Role of psychiatrists in the prediction and prevention of suicide: a perspective from north-east Scotland. *Br J Psychiatry* 2001; **178:** 494-496.
8. King EA, Baldwin DS, Sinclair JMA, *et al*. The Wessex recent in-patient suicide study, 1. Case-control study of 234 recently discharged patient suicides. *Br J Psychiatry* 2001; **178:** 531-536.
9. Foster T, Gillespie K, McClelland R. Mental disorders and suicide in Northern Ireland. *Br J Psychiatry* 1997; **170:** 447-452.
10. Power K, Davies C, Swanson V, *et al*. Case–control study of GP attendance rates by suicide cases with or without a suicide history. *Br J Gen Pract* 1997; **47:** 211-215.
11. Vassilas CA, Morgan HG. Suicide in Avon. Life stress, alcohol misuse and use of services. *Br J Psychiatry* 1997; **170:** 453-455.
12. Haste F, Charlton J, Jenkins R. Potential for suicide prevention in primary care? An analysis of factors associated with suicide. *Br J Gen Pract* 1998; **48:** 1759-1763.
13. Gunnell D, Lopatatzidis A, Dorling D, *et al*. Suicide and unemployment in young people. Analysis of trends in England and Wales, 1921–1995. *Br J Psychiatry* 1999; **175:** 263-270.
14. Hawton K, Houston K, Shepperd R. Suicide in young people. Study of 174 cases, aged under 25 years, based on coroners' and medical records. *Br J Psychiatry* 1999; **175:** 271-276.
15. Houston K, Hawton K, Shepperd R. Suicide in young people aged 15–24: a psychological autopsy study. *J Affect Disord* 2001; **63:** 159-170.
16. Pirkis J, Burgess P. Suicide and recency of health care contacts. A systematic review. *Br J Psychiatry* 1998; **173:** 462-474.
17. Matthews K, Milne S, Ashcroft GW. Role of doctors in the prevention of suicide: the final consultation. *Br J Gen Pract* 1994; **44:** 345-348.
18. Tudiver F, Talbot Y. Why don't men seek help? Family physicians' perspectives on help-seeking behaviour in men. *J Fam Pract* 1999; **48:** 47-52.
19. Isometsa ET, Lonnqvist JK. Suicide attempts preceding completed suicide. *Br J Psychiatry* 1998; **173:** 531-535.
20. Andersen UA, Andersen M, Rosholm JU, Gram LF. Contacts to the health care system prior to suicide: a comprehensive analysis using registers for general and psychiatric hospital admissions,

contacts to general practitioners and practising specialists and drug prescriptions. *Acta Psychiatr Scand* 2000; **102:** 126-134.
21. Squires N. *Suicide in North Cheshire*. Runcorn: North Cheshire Health Authority, 1995.
22. Appleby L, Amos T, Doyle U, *et al*. General practitioners and young suicides. A preventive role for primary care. *Br J Psychiatry* 1996; **168:** 330-333.
23. Isometsa ET, Heikkinen ME, Martunnen MJ, *et al*. The last appointment before suicide: is suicide intent communicated? *Am J Psychiatry* 1995; **152:** 919-922.
24. Milton J, Ferguson B, Mills T. Risk assessment and suicide prevention in primary care. *Crisis* 1999; **20:** 171-177.
25. Kendrick D, Groom L, Hippisley-Cox J, *et al*. Accidental injury: a neglected area within primary care groups and trusts? *Health Educ Res* 2003; **18:** 380-388.
26. Garvey Wilson AL, Lange JL, Brundage JF, Frommelt RA. Behavioral, demographic, and prior morbidity risk factors for accidental death among men: a case-control study of soldiers. *Prev Med* 2003; **36:** 124-130.
27. Courtenay WH. Behavioral factors associated with disease, injury, and death among men: evidence and implications for prevention. *Journal of Men's Studies* 2000; **9:** 81-142.
28. Morgan HG, Priest P. Suicide and other unexpected deaths among psychiatric in-patients. The Bristol confidential inquiry. *Br J Psychiatry* 1991; **158:** 368-374.
29. Boardman AP, Grimbaldeston AH, Handley C, *et al*. The North Staffordshire suicide study: a case-control study of suicide in one health district. *Psychol Med* 1999; **29:** 27-33.
30. Griffiths C, Broack A, Mickleburgh M. Deaths relating to drug poisoning: results for England and Wales, 1993–2000. *Health Stat Q* 2002; **13:** 76-82. http://www.statistics.gov.uk/downloads/theme_health/HSQ13_v4.pdf (accessed 23 Feb 2004).
31. Charlton J, Kelly S, Dunnell K, *et al*. Trends in suicide deaths in England and Wales. *Population Trends* 1992; **69:** 10-16.
32. Stanistreet D, Taylor S, Jeffrey V, Gabbay M. Accident or suicide? Predictors of coroners' decisions in suicide and accident verdicts. *Med Sci Law* 2001; **41:** 111-115.
33. Vassilas C, Morgan HG. General practitioners' contact with victims of suicide. *BMJ* 1993; **307:** 300-301.
34. Rutz W, von Knorring L, Pihlgren H, *et al*. An educational project on depression and its consequences: is the frequency of major depression among Swedish men underrated, resulting in high suicidality? *Prim Care Psychiatry* 1995; **1:** 59-63.
35. Pfaff JJ, Acres JG, McElvey RS. Training general practitioners to recognise and respond to psychological distress and suicidal ideation in young people. *Med J Aust* 2001; **174:** 222-226.
36. Gask L, Dowrick C, Dixon C, *et al*. A pragmatic cluster randomised controlled trial of an educational intervention for GPs in the assessment and management of depression. *Psychol Med* 2004; **34:** 63-72.
37. Appleby L, Morriss R, Gask L, *et al*. An educational intervention for front-line health professionals in the assessment and management of suicidal patients (the STORM project). *Psychol Med* 2000; **30:** 805-812.
38. Gunnell D, Middleton N, Whitley E, *et al*. Why are suicide rates rising in young men but falling in the elderly? A time-series analysis of trends in England and Wales 1950–1998. *Soc Sci Med* 2003; **57:** 595-611.
39. Jones R, Gruer L, Gilchrist G, *et al*. Recent contact with health and social services by drug misusers in Glasgow who died of a fatal overdose in 1999. *Addiction* 2002; **97:** 1517-1522.
40. Pirkis J, Burgess P, Meadows G, Dunt D. Self-reported needs for care among persons who have suicidal ideation or who have attempted suicide. *Psychiatr Serv* 2001; **52:** 381-383.
41. Department of Health. *The health of the nation key area handbook: mental illness.* London: Department of Health, 1992.
42. Department of Health. *Our healthier nation. A contract for your health.* London: HMSO, 1999.

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