



research

Youth suicide issues in general practice

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OBJECTIVE To identify the factors that predispose to suicidal thinking and behaviours in young Australians who visit a general practitioner.

METHOD A clinical audit program that required a pre-entry survey of 50 young people attending a GP.

RESULTS Suicidal thinking and behaviours in young people have been increasing over the past decades. In this survey of over 6000 young Australians, evidence suggests that there are fundamental mental health factors that all GPs should explore with young people to assess the risk of self harm. These include feelings of hopelessness and powerlessness, the pattern and type of drug use, a history of sexual abuse, concerns about sexuality and sexual identity.

DISCUSSION General practitioners should not rely on their previous knowledge of a young person but continue to explore issues of suicide where any combinations of the above factors are present.

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Australia's suicide rate in young people has steadily increased over the last few decades, to an overall rate among young people of 16.4/100 000 in 1996. The more disturbing trend has been in the rise in young male suicides from 6.8/100 000 in 1960 to 26.8/100 000 in 1994. The rise for young women, whilst still serious, has been less striking, from 2/100 000 to 4.3/100 000 over the same period.

Australian general practitioners see over two million young people under age 25 years annually in over 11 million consultations.¹ McKelvey et al found that even though 87.5% of young people presented to a GP with medical complaints, nearly 25% had evidence of significant emotional distress.² However, only 12% of their sample presented with a mental health issue primarily to the GP. In the UK, Kramer et al concluded that depressive and anxiety disorders in adolescents were common yet under-recognised by GPs.³ As

a suicide prevention measure, it is imperative that GPs recognise the early warning signs of mental illness and distress that young people may display and take steps to prevent potential suicidal behaviours.

This study examines the relationship of suicidal thinking to depression, drug use and sexuality from a cohort of over 6000 young Australians who visited a GP in 1997–1998.

Method

General practitioners self selected to be involved in a practice audit activity: 'Young People in Your Practice'. The practice audit activity had received ethical approval from the RACGP Research, Evaluation and Ethics Committee.

A pre-entry survey was designed for young people aged 15–24 to complete as they arrived in the surgery. Informed consent was obtained from the presenters prior to the administration of the survey forms.

After a practice determined start date, the first 50 consecutive young people to arrive in the surgery were offered the opportunity to participate. The survey consisted of 49 questions divided into five sections. The sections were:

- general health (5 questions)
- relationships and feelings (9 questions)
- drug issues (10 questions)
- sexuality (11 questions), and
- practice and GP service issues (14 questions).

A suicide index was developed using the following five questions:

- Have you been feeling really depressed recently?
- Have you felt that life is entirely hopeless?
- Have you been thinking of yourself as a worthless person?
- Have you been feeling that everything is outside your control?
- Have you been wanting to hurt yourself?

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These questions utilised a three point Likert scale response and were given numerical values: most of the time = 2; sometimes = 1; and never = 0. The scale for each question was added to create the index score. The use of these questions was based on the data showing these are clinical indicators of depression and suicide.

A further question: 'Have you been feeling so depressed recently that you have made serious plans to take your own life?' required only a 'Yes/No' response and had a free field for additional comments.

All data was initially entered into ACCESS databases. Programs were then written in the ACCESS programming language (based on Visual Basic) to organise the data for importation into SPSS. All analyses were carried out using SPSS.

The sample was described using frequencies, means, standard deviations and graphical representation. Parametric tests were used on interval measurement data (Likert type scales were regarded as interval measurement). Null hypotheses were nondirectional and were tested using independent *t*-tests, one way analysis of variance and factorial ANOVAs. Proportional *t*-tests and dependent *t*-tests were used to analyse paired samples. Proportional tests are used where a null hypothesis is generated that states the two proportions in a sample population are the same. Nominal and ordinal data were analysed using *chi*-square and binomial tests. The significance level for all tests was set at $p < 0.01$. The internal reliability of the composite indices were analysed with Cronbach alphas. The Mann-Whitney U test was applied to the suicide index compared to the question on suicide plans.

Results

Data was collected by 158 GPs from 138 practices around Australia. The distribution of practices is illustrated in Table 1.

There were 6558 young people who completed the survey. Data was missing on age from 270 (4.1%). The age distribution was 15–17 years, 25.9% (1054 female, 564 male); 18–20 years, 31.2% (1258 female, 689 male); and 21–24 years, 40.1% (1760 female, 847 male). Only 1% (63) of the sample were either too young or too old. Of the sample 34.1% (2100) were male and 65.9% (4072) were female. Gender was not specified by 4.2% (275).

In terms of work status 19% (1245) were still at school, 16.2% (1060) were in tertiary education, 3% (196) nominated homemaker, 9.3% (608) were looking for work and 35.6% (2336) were working. There was no data from 5.5% (361) concerning their educational or work status.

Nearly 11.4% (468 female, 274 male) of the sample were visiting a practice or a GP for the first time, 26.1% (1032 female, 664 male) had attended between 2–5 times, while over 55% (2495 female, 1108 male) reported attending the practice for six or more visits; 7.3% (478) of respondents failed to answer this question.

Factors impacting on suicide index

The Cronbach alpha was 0.84 for the suicide index and 0.85 for the drug abuse index. The Mann-Whitney U test showed that there was a significant increase in the suicide index for those young people who had made serious suicidal plans compared to those who had not made such plans (Z -score = -27.318 , 2 tailed $p < 0.000$).

The reported overall rate for suicidal plans was 5.6% (364) of respondents. The mean suicide index score for those who had made serious suicide plans was 6.4 compared to 2.2 for those who had not made such plans (6008; *t*-test, 2 tailed, $p < 0.000$). Overall females had a higher suicide index than males with a score of 2.6 (4133) compared to 2.2 (2125; *t*-test, 2 tailed, $p < 0.000$). Those young people who stated that they had been depressed most of the time had a suicide index score of

Table 1. Practice locations

Location	Metropolitan	Rural
Queensland	11	17
New South Wales	31	18
Victoria	7	8
South Australia	19	7
Tasmania	1	0
Western Australia	7	0
Northern Territory	1	1
ACT	10	0
Total	87	51

6.4 (771) compared to those who were depressed some of the time (2.9 [3342]) and those who reported no depression (0.5 [2346; Post Hoc Tukey, $p < 0.000$]).

Smoking

Young people in the sample who smoked every day had a higher mean suicide index of 3.2 (1836) compared to those who smoked once per week (2.8 [427]), those who smoked at least monthly (2.5 [449]) and those who never smoked, whose score was 2.0 (3709; Post Hoc Tukey $p < 0.000$).

Alcohol consumption

The 191 young people who drank every day had a suicide index score of 4.0 compared to those who drank weekly (2.4 [2099]) and monthly (2.5 [2493]) and those who never drank alcohol (2.1 [1602]; Post Hoc Tukey, $p < 0.000$). The 54 young people who chose to drink in order to get drunk every day had a suicide index score of 5.0 compared to those who drank to get drunk weekly (3.1 [741]), monthly (2.7 [1963]) or never (2.1 [3571]; Post Hoc Tukey, $p < 0.000$).

Drug use

The 379 young people who smoked marijuana everyday had a suicide index of 3.9 compared to those who never smoke marijuana (2.1 [4751]; Post Hoc Tukey, $p < 0.000$). The 332 young people who smoked marijuana to get stoned every



day had a suicide index of 4.0 compared to those who never smoked marijuana.

The 63 young people who used non-prescription drugs (IV drugs and amphetamines) everyday had a score of 4.8; weekly (4.5 [96]); monthly (3.5 [383]); and never (2.3 [5744]; Post Hoc Tukey, $p < 0.01$). The 759 young people who reported losing control after using drugs had a suicide index of 3.9 compared to those who did not lose control (2.3 [3827]; Post Hoc Tukey, $p < 0.000$). The 1055 young people who had difficulty recalling what had happened after drug use had a suicide index of 3.4 compared to those who had no such difficulties (2.3 [3560]; Post Hoc Tukey, $p < 0.01$).

Sexual abuse

The 876 young people who felt they had been sexually abused had a suicide index of 4.0 compared to those who had not been abused (2.1 [5076]; Post Hoc Tukey, $p < 0.000$). The mean suicide index was slightly higher for male sexual abuse victims (4.1 [106]) than for female sexual abuse victims (4.0 [758]), although not statistically significant.

Interpersonal communication

In response to the interpersonal communication issues between the doctor and the young person, those who had a higher suicide index score were more likely to report that the doctor did not make it easier for them to ask difficult or personal questions (2.9 [446] v 2.4 [4516]; Post Hoc Tukey, $p < 0.000$). Those young people with a higher suicide index also felt they could not initiate a discussion on a difficult personal issue unless the doctor asked a specific question (3.2 [713] v 2.3 [3859]; Post Hoc Tukey, $p < 0.000$). There were no statistically significant differences in the suicide index based on the number of times a young person had visited the GP/practice.

Discussion

This survey strongly supports the potential role of GPs in suicide assessment and

thus a real opportunity exists for preventive strategies to be implemented.

Suicidal plans

First is the relatively high prevalence of 'serious suicidal plans' — overall 5.7%, with 5.1% of young men and 6.1% of young women reporting such plans. The results are consistent with other international studies on adolescents. In the US, Lewhinsohn et al found that 23.7% of young women and 14.8% of young men aged 14–18 had experienced suicidal thoughts over their lifetime.⁴ King et al found that 10–20% of young women and 4–10% of young men reported a history of suicidal behaviour.⁵ King concluded that in a typical high school classroom, one male and two females would have made a suicide attempt in the last year. In summary, suicidal thoughts appear frequently in young people and these thoughts are translated into serious suicidal plans by a significant number.

The overall completed suicide rate in Australia for young people has been quoted at 16.4/100 000, with an attempt rate of 25–100 times this figure. The ECA study from the US identified an attempt rate of 220/100 000,⁶ while Andrews et al found 2.2% of females and 1.1% of males admitted to a suicide attempt in the previous 12 months.⁷ Based on this data and using the upper limit of the estimates, the attempt rate in Australia should be approximately 1.6% of young people aged 15–24 years. Combining all of the data and assuming that those who make serious suicidal plans are indeed the more likely to attempt a suicide, one in three of these may go on to an attempt and of these one in 100 will succeed. Based on this rationale, in population health terms, there is a high prevalence of suicidal thinking, planning and behaviours among young people, which may reflect a high level of mental distress in this age group. While completed suicides remain

the focus of attention in much research, such a focus fails to fully recognise the other aspects of suicidality among young people. From a preventive perspective it is important to deal with the issues of mental health in young people as a whole, in an attempt to reduce the overall suicide rate.

Relationship with the GP

Young people who responded to this survey were, in the main, regular attendees to their GP. It is noteworthy that there was no difference in the suicide index depending on the number of visits a young person made to a GP. The implication is that even when a GP knows the young person well, that young person may still have made recent serious suicidal plans. Therefore the GP is not necessarily in a position to be able to predict a suicide based on previous knowledge of the young person.

The results also indicate the most at risk young people are the ones least likely to initiate discussion about difficult personal issues and feel least at ease about discussing their problems. It is therefore the responsibility of the GP to commence the discussion. It is imperative that the GP not ignore any warning signs or risk factors and that they discuss suicide ideation directly with any young person about whom they are concerned.

Internal feelings

The internal feelings of young people play a key role in the development of suicide. Young people who feel hopeless, worthless and powerless are at greater risk of self harm, depression and suicidal thinking and behaviours. These feelings do not occur in isolation but are a result of many complex interactions between sociocultural and environmental issues.

Substance abuse and suicide risk

Substance use and abuse has long been associated with adolescent suicide.⁸ The

hypothesis is that young people use drugs to decrease the intense negative feelings that they are experiencing as a result of their emotional distress.⁹ Unfortunately, rather than relieve such negative feelings, the use of such substances can accentuate the negative effect to the point of precipitating a suicidal attempt. In addition, there appears to be a link between multidrug use and suicidal thinking. Newcombe et al found that individuals who increased their use of multiple drugs during their adolescence had greater suicidal ideation than those who were not multidrug users.¹⁰ With reference to particular drug issues, as in our results, Kandel et al found an association with more frequent marijuana use and higher levels of suicidal thinking.¹¹ As in our study, alcohol use and abuse has been associated with increased suicide index. In other studies the problematic use of alcohol was more strongly related to suicidal attempts than to suicidal plans or risk.¹² In summary, a young person with a history that includes a pattern of drug use with:

- the motivation of (or outcome of) drinking to get drunk or of smoking marijuana to get stoned
- the daily use of any drug
- the use of illicit drugs and an adverse sequelae of use

are all warning signs of potential serious suicidal thinking. Such young people should be asked specific questions about their feelings and in particular their suicidal thinking, planning or intent.

Sexual identity and sexual abuse

Wagner et al found that young people who had a history of suicide attempts had more concerns about sexuality than nonattempters.¹³ This included such issues as concerns about pregnancy, pressure to have sex and acquiring a sexually transmitted disease. Our results confirm that where young people have a higher level of concerns about their sexuality they have an elevated suicide index. In particular those young people who report sexual

abuse have a higher suicide index than those who do not. What is of concern is that young men who have been sexually abused could be at greater suicide risk than young women.

Conclusion

The factors predisposing to suicide behaviours in young people represent a complex biopsychosocial-environmental mix. Nevertheless, there are key warning signs that should initiate a discussion with the young person about their current mental health state. These include internal issues for the young person such as feelings of powerlessness, worthlessness and hopelessness with anything that has the ability to heighten and exaggerate these feelings. External factors such as substance abuse and more particularly, the pattern of that abuse can indicate the young person is at risk. Sexual abuse also plays a significant role, as does societal factors for young people struggling with their sexual identity.

The role of the GP in prevention therefore needs to address a number of fundamentals. There needs to be support for young people with sexuality concerns and the ability to support young people in their choice of sexual identity. More attention needs to be paid to preventive counselling with young people on risk behaviours including substance use and sexual behaviours. Obtaining a thorough history from young people regarding these issues is important and should not be overlooked. It is clear that to be most effective in suicide prevention, GPs must take the initiative and raise the issues of depression and suicide with young people because those most at risk are the ones least likely to volunteer the information regarding their high levels of emotional distress.

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References

1. Commonwealth Department of Health and Family Services. *General Practice in Australia:1996*. Commonwealth of Australia 1996.
2. McKelvey RS, Davies LC, Pfaff JJ, Acres J, Edwards S. Psychological distress and suicidal ideation among 15-24 year olds presenting to general practice: a pilot study. *Aust NZ J Psychiatry* 1998; 32: 344-348
3. Kramer T, Garralda ME. Psychiatric disorders in adolescents in primary care." *Br J Psychiatry* 1998; 173: 508-513.
4. Lewinsohn PM, Hops H, Roberts RE, Seeley JR, Andrews J. Adolescent psychopathology. Prevalence and incidence of depression and other DSM III R disorders in high school students. *J Abnorm Psychol* 1993; 102: 133-144
5. King CA. Suicidal behaviours in adolescence. In Maris RW, Silverman MM, Canetto SS (eds) *Review of suicidology* 1997; New York; Guilford Press: 61-95.
6. USA Task Force on Youth Suicide. *Final Report*. US Department of Health and Human Services 1989.
7. Andrews JA, Lewinsohn PM. Suicidal attempts among older adolescents: prevalence and co-occurrence with psychiatric disorders. *J Am Acad Child Adolesc Psychiatry* 1992; 31: 655-662
8. Windle RC, Windle M. An investigation of adolescents' substance use behaviours, depressed affect, and suicidal behaviours. *J Child Psychol Psychiat* 1997; 38 (8): 921-929.
9. Cooper ML, Frone MR, Russell M, Mudar P. Drinking to regulate positive and negative emotions: a motivational model of alcohol use. *J Pers Soc Psychol* 1995; 69: 990-1005
10. Newcombe MD, Scheier LM, Bentler PM. Effects of adolescent drug use on adult mental health: a prospective study of a community sample. *Exp Clin Psychopharmacol* 1993; 1: 215-241.
11. Kandel DB. Marijuana users in young adulthood. *Arch Gen Psychol* 1984; 41(2): 200-209.
12. Duncan SC, Alpert A, Duncan TE, Hops H. Adolescent alcohol use development and young adult outcomes. *Drug Alcohol Depend* 1997; (4): 39-48.
13. Wagner BM, Cole RE, Schwartzman P. Psychosocial correlates of suicide attempts among junior and senior high school youth. *Suicide Life Threat Behav* 1995; 25; (3): 358-372.