

# Detecting suicidal ideation in older patients: identifying risk factors within the general practice setting

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## ABSTRACT

### Background

GPs are the most frequently accessed health professional among suicidal individuals in the community.

### Aim

To determine the prevalence of psychological distress and suicidal ideation among patients aged 60 years and older presenting to GPs, and the relationship between these variables in detecting patients who may be contemplating suicide.

### Design of study

Cross-sectional analysis of older patients presenting to Australian GPs between 2002 and 2003.

### Setting

One thousand and sixty-one consecutive patients aged 60 years or over attending one of 54 randomly selected Western Australian GPs.

### Method

Prior to their medical consultation, patients completed a self-report questionnaire, which included questions about current suicidal ideation (Depressive Symptom Inventory Suicidality Subscale [DSI-SS]) and depression (Center for Epidemiological Studies Depression Scale [CES-D]). Patients' chief complaints were obtained from consultation summary sheets completed by their GP.

### Results

Although only 5.1% of patients presented with psychological complaints, 5.8% acknowledged current suicidal ideation and 23.8% had clinically significant levels of depressive symptomatology. Suicidal ideation was associated with CES-D scores greater than 16 (odds ratio [OR] = 3.7, 95% confidence interval [CI] = 1.5 to 8.9), feelings of depression (OR = 7.7, 95% CI = 3.4 to 17.7), and previous suicide attempt (OR = 7.4, 95% CI = 2.7 to 20.2) in a logistic regression model, but not with poor self-perceived health, use of licit drugs (smoking, alcohol, and hypnotics), or type of presenting complaint at the time of assessment.

### Conclusions

Although older general practice patients tend to present for issues related to their physical health, approximately a quarter of this cohort also possess high levels of psychological distress, including current thoughts of suicide. Older patients who show any signs of depression or distress should be asked about psychological symptoms, including suicidal ideation.

### Keywords

age; depression; family practice; suicide.

## INTRODUCTION

Although most GPs may experience the death of a patient through suicide once every 5 years, nonetheless there are high levels of service contact with GPs by suicidal patients, and an average of six patients on a GP's list will deliberately self-harm each year.<sup>1</sup> Australians who are experiencing suicidal ideation are three times more likely to have visited a GP in the last month compared with those without such thoughts.<sup>2</sup>

Older patients, in particular, tend to consult a GP in the month prior to their death by suicide,<sup>3,4</sup> which suggests that GPs may have a vital role in preventing suicide among people in this age group. Although rates of suicide among older Australians have declined over the last century,<sup>5</sup> the ratio of men who kill themselves in late old age remains greater than that for their youthful counterparts (24.4 versus 20.3 per 100 000 in the age groups  $\geq 75$  and 15–24 years, respectively).<sup>6</sup> As part of an educational project designed to enhance GPs' detection and management of older adults at risk of suicide, we report on the prevalence of suicidal ideation among patients aged 60 years and older attending Australian GPs, and the risk factors most likely to identify them.

## METHOD

### Study population

The study population consisted of patients aged 60 years or over attending one of 54 randomly

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## How this fits in

Approximately 80% of older adults will visit their GP at least once a year in Australia, and as many as two out of three people who attempt suicide will contact their GP during the month prior to their suicide attempt. This highlights the major role that GPs might play in the management of mental illness and prevention of suicide in older patients. Our results confirm that having clinically significant depressive symptoms, acknowledging being depressed, and having previously attempted suicide represent the most robust associations with current suicidal ideation among older adults who visit their GP. It also shows that most older adults contemplating suicide do not present to the practice with psychological complaints.

selected GPs. A list of all Western Australian GPs was compiled and grouped according to regional postcodes. The number of GPs invited to participate in the survey was proportional to the number of older adults living in that particular postcode. Practitioners in each postcode region were ranked according to a list of random numbers generated by computer — invitations were sent out until the required number of GPs was available for each of the individual regions. A maximum of 15 consecutive patients from each clinic was invited to participate, with GPs given up to 4 weeks to complete this task. Patients taking part in the study were required to:

- be aged 60 years or older,
- be fluent in written English, and
- give written informed consent to participate.

As an incentive to take part in the study, each GP was awarded clinical audit points from the Royal Australian College of General Practitioners for their involvement, which fulfilled their mandatory triennial vocational training requirements.

### Survey methods

Patients awaiting general practice consultations were given the study's self-report questionnaire package by the practice nurse or receptionist. This questionnaire gathered information on age, sex, and licit drug use (alcohol, tobacco, and hypnotic medication), and assessed subjects for the presence of depressive symptoms and suicidal ideation (as clarified in the 'Instruments' section). Materials were completed and returned before the medical appointment. GPs were not aware of whether patients had chosen to participate in the study or of the results of patients' questionnaires.

Following each consultation with one of their 15 audit patients, the GP completed a brief standardised tick-box questionnaire designed to clarify the reason for the consultation, current medical problems and medication used, as well as

the doctor's opinion about the presence of depression or suicidal ideation. At the end of the 4-week study period, patients' questionnaires and the consultation summary sheets were posted to the research team. The presenting complaints were classified as either medical (including well-person care) or psychological; for example, depression, bereavement, anxiety (with or without accompanying medical complaints).

### Instruments

Study instruments consisted of the Depressive Symptom Inventory Suicidality Subscale (DSI-SS)<sup>7</sup> and the Center for Epidemiologic Studies Depression Scale (CES-D).<sup>8</sup>

The DSI-SS is a four-item self-report questionnaire designed to identify the frequency and intensity of suicidal ideation and impulses in the previous 2 weeks. Scores on each item range from 0 to 3 and, for the inventory, from 0 to 12, with higher scores reflecting greater severity of suicidal ideation. Past work has supported the scale's psychometric properties in general;<sup>9,10</sup> specifically among a group of 15–24-year-old general practice patients, the scale was demonstrated to have favourable reliability and validity characteristics.<sup>11</sup>

The CES-D was used to assess the presence of depressive symptomatology. Scores on the 20-item scale range from 0 to 60, with higher scores reflecting greater severity of depression. The CES-D has demonstrated favourable psychometric properties among groups of older people in both community and general practice settings.<sup>12,13</sup> The recommended cut-off score of 16 or greater on the CES-D<sup>8</sup> was utilised to classify patients as experiencing significant depressive symptomatology.

### Statistical analysis

The data were analysed using the statistical package SPSS-11. Differences between groups of patients were tested using the Mann-Whitney U Test,  $\chi^2$  using Yates' Correction, and odds ratios (ORs). Logistic regression was used to build an explanatory model of suicidal ideation.

## RESULTS

### Patient characteristics

Of the 1433 patients aged 60 years and older who attended during the study period, 1061 patients agreed to participate and completed a questionnaire prior to their medical consultation. The majority of participants were female (57.0%) and had a mean age of 72.2 years (standard deviation [SD] = 7.3; range = 60–101 years). Aged patients who attended the surgery but failed to complete a questionnaire were older (Mann-Whitney U test  $z = -2.67$ ,  $P =$

0.008) and more often female ( $\chi^2 = 4.279$ , degrees of freedom (df) = 1,  $P = 0.039$ ), compared with patients who completed a questionnaire. However, no significant differences were found between questionnaire responders and non-responders based on their mean number of prescription medications, the proportion taking psychotropic medication or rated as depressed or suicidal by their GP, or the number of patients presenting with psychological complaints.

### Depressive symptomatology

Over a fifth of participants (23.8%) scored 16 or more on the CES-D, with scores ranging from 0 to 54 and a mean score of 11.1 (SD = 8.8). There were no significant age (Mann-Whitney U test  $z = -1.68$ ,  $P = 0.090$ ) or sex differences ( $\chi^2 = 0.01$ , df = 1,  $P = 0.925$ ) between those patients scoring above or below the CES-D cut-off.

### Consultation information and psychological distress

Consultation summary reports were available for 88.3% (937/1061) of the patient participants. Although a quarter of the sample scored above the cut-off on

either the CES-D or the DSI-SS, only 5.0% presented with psychological complaints. The remaining participants presented with somatic medical complaints or sought well-person care (for example, influenza vaccinations). Of those presenting with medical complaints, 21.8% and 4.9% scored above the cut-off of the CES-D and DSI-SS, respectively. For those with psychological complaints, 59.6% and 21.3% scored above the respective CES-D and DSI-SS cut-off. Although only a small proportion of the sample, patients presenting with psychological complaints were approximately five times more likely to score above the CES-D cut-off (OR = 5.29, 95% CI = 2.89 to 9.69) and the DSI-SS cut-off (OR = 5.22, 95% CI = 2.44 to 11.20), compared with patients presenting with somatic complaints.

### Suicidal ideation

Among participants, 5.5% scored above the cut-off for the DSI-SS, indicating the presence of suicidal ideation over the previous 2 weeks (range = 0–6; SD = 0.74). Univariate analyses (Table 1) suggested that patients who were contemplating suicide were more likely to report poor health, use sleep medication, smoke, acknowledge feeling depressed, have a

**Table 1. Risk factors associated with current suicidal ideation in older general practice patients.**

	Suicide ideators	Non-suicide ideators	P-value	OR (95% CI) <sup>a</sup>	Logistic regression model <sup>b</sup> OR (95% CI)
Mean age in years (SD)	70.5 (6.7)	72.3 (7.4)	0.09	–	–
Male	24/53	386/874	0.874	1.0 (0.6 to 1.9)	–
Older old age (>75 years)	14/53	330/874	0.097	0.6 (0.3 to 1.1)	–
Harmful or hazardous drinking (>two drinks a day)	2/41	17/596	0.461	1.7 (0.2 to 7.8)	–
Polypharmacy (>two medications per day)	38/53	571/860	0.427	1.3 (0.7 to 2.5)	–
Self-perceived poor health	9/53	37/862	<0.001	4.6 (1.8 to 10.4)	1.7 (0.6 to 4.7)
Use of sleeping tablets	31/50	224/851	<0.001	4.6 (2.4 to 8.7)	1.7 (0.8 to 3.4)
Currently smoking	5/52	33/850	0.046	2.6 (0.8 to 7.2)	1.9 (0.6 to 6.3)
Acknowledges feeling depressed	31/53	59/863	<0.001	19.2 (10.0 to 36.9)	7.7 (3.4 to 17.7)
CES-D $\geq$ 16	41/53	177/863	<0.001	13.2 (6.6 to 28.2)	3.7 (1.5 to 8.9)
Previous suicide attempt	12/53	23/874	<0.001	10.8 (4.5 to 24.4)	7.4 (2.7 to 20.2)
Psychological presenting complaint	10/53	37/868	<0.001	5.2 (2.2 to 11.6)	1.7 (0.8 to 3.4)

<sup>a</sup>95% CI = CI of the odds ratio. <sup>b</sup>The explanatory model included all variables that discriminated between suicide ideators from non-ideators in the univariate analyses ( $\alpha = 5\%$ ). CES-D = Center for Epidemiological Studies Depression Scale. OR = odds ratio. SD = standard deviation.

CES-D score greater or equal to 16, have a prior history of a suicide attempt, or present with psychological complaints compared with those older patients without thoughts of suicide. An explanatory logistic regression model was fitted to the variables that were significantly associated with suicidal ideation among participants in the univariate analyses. This multivariate analysis revealed that current suicidal ideation was strongly associated with subjectively feeling depressed during the previous week, a CES-D score of 16 points or greater, and a prior history of attempted suicide (Table 1).

## DISCUSSION

### *Summary of main findings*

Approximately 1 in 20 older patients visiting their GP acknowledged having suicidal ideation within the previous 2 weeks, while over 20% were found to possess clinically significant depressive symptomatology, based on their CES-D scores. Feeling depressed or having a CES-D score of 16 or more were the best indicators of current suicidal ideation among the patients in this general practice cohort.

Subjects presenting with psychological complaints were five times more likely to be experiencing high levels of depressive symptomatology and suicidal ideation than those patients attending for somatic reasons. However, only 5.0% of our older patients reported psychological distress as the reason for the appointment, resulting in a greater attention to physical complaints during the vast majority of medical consultations.

Importantly, over a fifth of those patients presenting for somatic reasons were also experiencing clinically significant depressive symptomatology and 5% acknowledged current suicidal thoughts. In fact, patients who perceived their current health as poor were more than four times more likely to possess current suicidal ideation compared with those who had a more positive opinion of their health status.

### *Comparison with existing literature*

Within our current study, the presence of suicidal ideation among older primary care patients is strongly related to depressive symptomatology and previous history of suicidal behaviour. We have recently investigated the characteristics of older adults who had attempted or completed suicide in Western Australia. Between 1980 and 1995 there were 447 deaths by suicide and 1596 hospital admissions following suicide attempts in Western Australia among people aged 60 years or over.<sup>14</sup> Using administrative record linkage data, we were able to demonstrate that the rate of suicide was

higher in older people compared with all other age groups. We also found that depression (risk ratio = 3.7, 95% CI = 1.5 to 9.4) and history of previous suicide attempt (risk ratio = 8.1, 95% CI = 3.0 to 21.7) were the only psychiatric factors associated with completed suicide in this population.

In Sydney, Snowdon and Baume<sup>15</sup> reviewed the coroner's files of 210 people aged 65 years or over who completed suicide between 1994 and 1998. They found that 160 (76.2%) were clearly depressed during the time preceding their suicide act. These results reinforce the conclusions of published psychological autopsy studies reporting that depression in later life is the most robust factor associated with suicide in later life.<sup>16,17</sup>

Over a fifth of our sample endorsed clinically significant depressive symptomatology. Such psychological problems are common in general practice, with up to one-third of primary care attenders experiencing a diagnosable or sub-threshold mental disorder.<sup>18</sup> Similar to our experience with adolescent and young adult general practice patients,<sup>19</sup> we have found that older patients who are suffering with psychological distress tend to present to primary care with predominately somatic complaints. Spontaneous disclosure of psychosocial complaints among psychologically distressed patients tends to be the exception rather than the rule in general practice and can determine whether or not underlying mental illness is recognised.<sup>20,21</sup>

### *Strengths and limitations of the study*

The study has some limitations that should be considered when interpreting its findings. We included no measure of test-taking approach and, thus, have no means to address whether a nil score on the DSI-SS may be denying suicidal symptoms that actually exist, whether positive scores may be exaggerating suicidal symptoms that are actually minimal, or both. We used this measure as an initial screen, and so in the case of positive scorers, more in-depth testing and interviewing should assist in clarifying the intensity of suicidal ideation and risk.

Another limitation is that our measure, results, and conclusions are limited to suicidal ideation, and may not apply to suicidal behaviour. However, it is important to emphasise that the purpose of this study was to assist clinicians in detecting and managing those older patients who were currently contemplating suicide — an important clinical symptom in its own right.

The strengths of this paper are its large sample size, the use of a representative random sample of GPs and of well-established instruments for the assessment of depression and suicide ideation.

### Clinical implications and further research

The strong link between suicidal ideation and depressive symptomatology in older patients demonstrated in this study suggests that the effective treatment of depression in this age group may have an impact on suicide rates among the aged. There is published evidence that treatment of depression significantly decreases the frequency of suicidal ideation in later life. Szanto *et al*<sup>22</sup> reported that 77.5% of their 395 older patients with major depression disclosed suicidal thoughts at their initial assessment. After 12 weeks of antidepressant treatment with paroxetine, nortriptyline, or interpersonal psychotherapy, only 18.4% were still thinking about suicide.

There is also indirect evidence that antidepressant treatment may reduce the overall prevalence of suicide among older Australians. Hall *et al*<sup>23</sup> analysed data obtained from the Australian Bureau of Statistics and Australian Pharmaceutical Industry with the aim of exploring the association between suicide trends and prescription of antidepressants in Australia between 1986 and 2001. They found that suicide rates during the study period fell most markedly for older people, who were the age group that most frequently consumed antidepressant medication. The authors concluded that the observed inverse relationship between the rates of suicide and prescription of antidepressants was possibly due to the improved treatment of depression by Australian GPs. Although preliminary results from observational studies and administrative data suggest that the treatment of depression reduces suicidal ideation and suicide completion in later life, direct supportive evidence from randomised trials is currently lacking.

Overall, our study's most important findings are the high level of psychological distress and potential suicidality identified in older patients presenting with primarily somatic complaints. As with younger patients,<sup>19</sup> there appears to be nothing specific in their presentation to alert GPs to the presence of clinically significant levels of psychological distress and suicidality. Older patients who show any signs of depression or distress should be asked about psychological symptoms, including suicidal ideation.

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### Ethics committee

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### Competing interests

None

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