

Late-life self-harm in the Waikato region

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ABSTRACT

AIMS: Late-life suicide is a growing public health concern in New Zealand. Given that suicide attempt is one of the strongest predictors of future suicide, the aim of this study was to examine the characteristics of older people (aged ≥ 65) who presented to the Waikato Hospital Emergency Department following an episode of self-harm between 1 July, 2010, and 30 June, 2013.

METHODS: Existing hospital databases and clinical recording systems for medical and psychiatric records were used to identify the sample. Data was collected retrospectively.

RESULTS: Of the 52 cases of elderly self-harm, 63.5% were classified as suicide attempt; 19.2% were self-injurious behaviour with no suicide intent; and 17.3% were self-injurious behaviour where the suicide intent was unknown. Overdose was the most common method (65.4%). 61.5% of the cases reported perceived physical illness as a stressor; while 50% were diagnosed with depression. 13.7% had repeated self-harm in the following 12 months.

CONCLUSIONS: This study has highlighted the role of physical illness and depression in older people presenting with self-harm. Routine screening of depression in older people with chronic medical conditions and assertive treatment of depression in primary care should be considered as strategies to reduce self-harm and suicide in older people.

Suicide is a major cause of death, both internationally and in New Zealand.¹ In 2004–06, suicide was the fourth leading cause of death for Māori males and the second leading cause of death for non-Māori males in New Zealand.² The Ministry of Health has developed the New Zealand Health Strategy in an effort to reduce the rate of suicide and suicide attempts.³

Late-life suicide has become a growing public health concern among New Zealand's ageing population. The suicide rate for older people (65 years and over) was 7.3 per 100,000 people, which is lower than the age-standardised rate of 10.6 per 100,000 people.⁴ However, the rates for the 65+ age group ranged widely, from 5.7 (age 65–69) to 22.2 (age 80–84) per 100,000 males, and from 1.3 (age 70–74) to 10.5 (age 85+) per 100,000 females. The absolute number of suicide and suicide attempts among older people are likely to rise as the proportion of older people in the population increases.⁵ Chronic medical conditions have been identified as a significant risk factor for suicide

and suicide attempts in older people.^{6,7} With advances in health care, the number of older people living with chronic medical conditions, and therefore at risk of suicide and suicide attempts, will also increase.

A history of previous suicide attempt is one of the strongest predictors of future completed suicide, particularly in older people.⁶ Older people who previously attempted suicide had a higher mortality rate (from both natural medical causes and completed suicide) than the general population, and they used more lethal means.^{8,9,10,11} A Medline literature review on attempted suicide between 1985 and 1994 showed that 9 to 18% of older people who had made a suicide attempt would make further attempt(s) within 12 months.¹² Of the 101 suicide attempters in another study, two people completed suicide within one month, while six people made further non-fatal attempts within 12 months.⁹

A recent retrospective study conducted in New Zealand found that almost a quarter

(24.4%) of older people who committed suicide had a past history of suicide attempt; this association was highest (51.6%) in females aged between 65–79 years old.¹³ A French study also showed that older women were more likely to be involved in repeated suicide attempts.⁸ Mood disorder was commonly associated with late-life suicide attempt, with over two-thirds of older people who attempted suicide receiving a diagnosis of depression.^{8,9,11}

The literature on late-life suicide and suicide attempts is, however, limited in New Zealand. One Christchurch case-control study examined 53 adults aged 55 and older who died by suicide or made medically serious suicide attempts, and the risk of serious suicidal behaviour was found to be increased among people with current mood disorders, a history of psychiatric hospital admissions within the previous year, and limited social networks.⁴

As elderly emergency department presentations with self-harm have yet to be examined in New Zealand, this study offers an opportunity to: (i) identify the incidence of self-harm presentations to the emergency department; (ii) characterise the nature of self-harm behaviour; and (iii) identify demographic and clinical factors that are associated with self-harm behaviour in the Waikato region over a 3-year period. The hope was that a better understanding of self-harm behaviour in older people would inform clinicians, public health practitioners, hospital administrators and policy makers on suicide prevention, risk assessment and management.

Methods

This was a retrospective, descriptive study. Ethics approval was obtained from the New Zealand Ministry of Health, Health & Disability Ethics Committee (Reference: 14/ST1).

The study population was older people (age ≥ 65 years) who presented to the Waikato Hospital Emergency Department (ED) following an episode of self-harm during the period of 1 July, 2010, to 30 June, 2013. Of the 20 district health boards in New Zealand, the Waikato District Health Board is the fifth largest, with a total population of 359,310 and 53,022 people (14.8%)

aged 65 years and older.¹⁴ Two databases were accessed to identify episodes of self-harm:

1. The Consultation-Liaison (CL) psychiatry service referral database was used to identify older people who had been referred for psychiatric assessment by the ED following self-harm.
2. The existing electronic coding reports used by the ED and hospital medical records department allowed the identification of older people who presented with self-harm, but were not reviewed by the CL service eg, after-hours admission (who were either assessed by on-call staff or the Crisis Assessment Team), those who were admitted directly to the high dependency unit or medical wards for acute medical intervention. The ICD-10 codes X60-X84 for “self-harm”, “suicide attempt” and “deliberate self-harm” were used to identify this group.

Each self-harm presentation was classified using the Colombia Classification Algorithm of Suicide Assessment (C-CASA).¹⁵ The three suicidal behaviour categories used in this study were: (i) suicide attempt; (ii) self-injurious behaviour with no suicide intent; and (iii) self-injurious behaviour where the suicide intent was unknown.

The following four categories of data were extracted from the medical and psychiatric records of the subjects identified by the CL psychiatric service and ED databases.

1. Socio-demographic factors: Age, gender, ethnicity, marital status, living arrangements.
2. Assessment and diagnosis: Past and current psychiatric diagnosis (depression, bipolar disorder, schizophrenia), antidepressant prescription at the time of self-harm, co-existent physical illnesses (dementia, malignancy, terminal illnesses and pain), non-psychiatric admission in the past 12 months, past history of self-harm.
3. Information about the self-harm: Location of self-harm, date of self-harm, method, acute stressors (death of first-degree relative, perceived disability and/or suffering from physical illness, terminal illness

Table 1: Socio-demographic factors and information about the self-harm

	Male (N=23) n (%)	Female (N=29) n (%)	Total (N=52) n (%)
Age groups (years)			
65–79	17 (73.9)	26 (89.7)	43 (82.7)
≥80	6 (26.1)	3 (10.3)	9 (17.3)
Ethnicity			
European	20 (87.0)	24 (82.8)	44 (84.6)
Māori	2 (8.7)	1 (3.4)	3 (5.8)
Asian	0 (0)	1 (3.4)	1 (1.9)
Unknown	1 (4.3)	3 (10.3)	4 (7.7)
Marital status			
Married/de facto ^a	11 (47.8)	16 (55.2)	27 (51.9)
Other	11 (47.8)	10 (34.5)	21 (40.4)
Unknown	1 (4.3)	3 (10.3)	4 (7.7)
Lived alone			
No	17 (73.9)	16 (55.2)	33 (63.5)
Yes ^b	3 (13.0)	9 (31.0)	12 (23.1)
Unknown	3 (13.0)	4 (13.8)	7 (13.5)
Self-harm location			
Home	13 (56.5)	14 (48.3)	27 (51.9)
Other	1 (4.3)	0 (0)	1 (1.9)
Unknown	9 (39.1)	15 (51.7)	24 (46.2)
Self-harm method			
Overdose	14 (60.9)	20 (69.0)	34 (65.4)
Laceration	5 (21.7)	3 (10.3)	8 (15.4)
Multiple means	2 (8.7)	5 (17.2)	7 (13.5)
Others (vehicle, CO poisoning, chemical ingestion)	2 (8.7)	1 (3.4)	3 (5.8)
C-CASA			
Suicide attempt	16 (69.6)	17 (58.6)	33 (63.5)
Self-injuries behavior with no suicide intent	6 (26.1)	4 (13.8)	10 (19.2)
Self-injuries behavior with unknown suicide intent	1 (4.3)	8 (27.6)	9 (17.3)

^a 2013 census: 62.1% older people (65+) were in partnership (spouse/de facto/partnered)²⁹

^b 2013 census: 28.8% older people (65+) were in a one-person household²⁹

Table 2: History of psychiatric & physical conditions and follow-up in 12 months

	Male (N=23) n (%)	Female (N=29) n (%)	Total (N=52) n (%)
Already under mental health service			
Yes	7 (30.4)	13 (44.8)	20 (38.5)
No	16 (69.6)	16 (55.2)	32 (61.5)
Depression			
Yes	10 (43.5)	16 (55.2)	26 (50.0)
Depressive Symptoms	5 (21.7)	2 (6.9)	7 (13.5)
No	8 (34.8)	11 (37.9)	19 (36.5)
Schizophrenia/Schizoaffective disorder/Psychosis NOS^a			
Yes	7 (30.4)	0 (0)	7 (17.3)
No	16 (69.6)	0 (0)	16 (82.7)
Bipolar disorder			
Yes	0(0)	2 (6.9)	2 (3.8)
No	0(0)	27 (93.2)	27 (51.9)
Dementia			
Yes	4 (17.4)	2 (6.9)	6 (11.5)
No	17 (73.9)	24 (82.8)	41 (78.8)
Unknown	2 (8.6)	3 (10.3)	5 (9.6)
Malignancy			
Yes	0 (0)	3 (10.3)	3 (5.8)
No	23 (100.0)	26 (89.7)	49 (94.2)
Terminal illness			
Yes	0 (0)	0 (0)	0 (0)
No	23 (100.0)	27 (93.1)	50 (96.2)
Unknown	0 (0)	2 (6.9)	2 (3.8)
Non-psychiatric hospital admission in past 12 months			
Yes	17 (73.9)	13 (44.8)	30 (57.7)
No	6 (26.1)	16 (55.2)	22 (42.3)
Past history of self-harm			
Yes	6 (26.1)	7 (24.1)	13 (25.0)
No	17 (73.9)	21 (72.4)	38 (73.1)
Unknown	0 (0)	1 (3.4)	1 (1.9)
Repeated self-harm in 12 months			
Yes	4 (17.4)	3 (10.3)	7 (13.7)
No	19 (82.6)	25 (86.2)	44 (86.3)
Unknown	0(0)	1 (3.4)	1 (1.9)
Follow up by mental health service			
Yes	18 (79.3)	22 (75.9)	40 (76.9)
No	5 (21.7)	7 (24.1)	12 (23.1)

^a NOS=not otherwise specified

in first-degree relative or carer, family discord, changed relationship/death of friend, relationship separation, financial trouble, employment change, legal difficulties).

4. Longitudinal data 12 months after an index self-harm episode: Repeated self-harm attempt, suicide, deaths.

Results

There were a total of 52 self-harm presentations in the 3-year period. Twenty-three (44%) were male (mean age=76 years, SD=7.9 years) and 29 (54%) were female (mean age=70 years, SD=6.5 years). The other demographic data and information about the self-harm are shown in Table 1.

Overdose (n=34, 65.4%) was the most common method of self-harm, followed by lacerations (n=8, 15.4%) and multiple means (n=7, 13.5%). Five cases that used multiple means involved an overdose of medication with alcohol; one case involved an overdose of medication with poisons; and another was an overdose of medication with carbon monoxide poisoning. Of the ten cases of self-injurious behaviour with no suicide intent, four cases took an accidental overdose.

Histories of psychiatric and physical conditions are shown in Table 2. Depression was the most common psychiatric diagnosis, 50% of the cases had a diagnosis of depression at the time of the self-harm or were given a diagnosis when assessed following the self-harm incident. A further seven cases (13.5%) were experiencing depressive symptoms, but did not meet the criteria for a diagnosis of depression. A total of 27 cases (51.9%) were taking antidepressant medication at the time of self-harm.

The most common background stressor for self-harm was perceived physical illness, which was found in 32 (61.5 %) cases. Examples of physical illnesses included chronic obstructive pulmonary disease, arthritis and macular degeneration. Pain was also a common finding at the time of self-harm, with 22 (42.3%) cases identifying pain as a factor (in particular, pain from arthritis and chronic back pain). Over half (57.7%) of the cases had at least one non-psychiatric hospital admission in the 12 months prior to the self-harm.

The other stressors that were reported by older people: family discord (59.4%), changed relationship/death of friend (50.0%), death of first-degree relative (48.5%), financial trouble (37.0%), terminal illness in first-degree relative or carer (22.9%), relationship separation (20.5%) and legal difficulties (12.1%).

Twenty cases (38.5%) were under the care of Mental Health & Addiction Services at the time of self-harm. 50% of the cases had a diagnosis of depression and 14% were experiencing depressive symptoms. Their background stressors of self-harm were similar to the entire sample: perceived illness (60.0%), family discord (40.0%), changed relationship/death of friend (35.0%), death of first-degree relative (25.0%), terminal illness in first-degree relative or carer (15.0%), relationship separation (15.0%) and financial trouble (10.0%).

Seven cases (13.7%) repeated self-harm in the 12 months following the index self-harm episode (Table 2). There was no suicide in the 12 months follow-up period, but five deaths (cause of deaths unknown in two cases) occurred in this period.

Discussion

The main findings of this descriptive study are consistent with that reported in the international literature on self-harm/suicide attempt in older people: (i) physical illness is a significant background stressor; (ii) depression is the most commonly diagnosed psychiatric disorder; and (iii) the rate of repeated self-harm is high, suggesting this is a very high-risk group.^{6,7,8,9,11,12}

Fifty-two cases of older people attempted self-harm in the 3-year period. Using the 2013 census data on the population in the Waikato region, this represents a 12-month rate of 0.0327% (male=0.0312%; female=0.0339%). This rate is slightly higher than the 2011 New Zealand national figures on intentional self-harm hospitalisations published by the Ministry of Health (rates ranged from 0.0198% to 0.0304% for the five 5-year age bands aged 65 and older).¹⁶ Our study used self-harm emergency department presentations, rather than hospitalisations, as the sampling frame. The higher rate found is likely to be explained by the fact that not every self-harm presentation to an emer-

gency department would result in hospital admission. Older females had a slightly higher rate of self-harm than males in our study. Conwell et al suggested that males were more successful at completing suicide than females, which may have reduced the number of older males that present to the ED.¹⁷ Older Māori were under-represented in our sample at only 5.8%. The 2013 census data recorded 4,690 Māori people aged 65 years and older living in the Waikato region (ie, 11.6% of the region's total population).¹⁴ Cheung et al also found an under-representation of older Māori in the number of completed suicides in New Zealand.¹³ The under-representation of older Māori in suicide and self-harm statistics could suggest Māori family and cultural practices may protect against elderly suicidal behaviour, but further research is required to explore this relationship.

Overdose at home was found to be the preferred method of self-harm in our study and was consistent with other international studies.^{8,11} This might be explained by the high numbers of prescription medications issued to older people (ie, ease of access). Overdose on prescribed medications offered a less traumatic and painful self-harm attempt. In this study, zopiclone and opiates were the most common medications used in overdose. This was in keeping with current literature, which has identified these medications are frequently prescribed for older people.^{4,18,19}

After 12 months, 90.4% of cases were alive in this study. We were not able to determine the cause of death in two cases, and the possibility of suicide cannot be excluded. The 12 month repeated self-harm rate of 13.7% found in our study falls within the range of 9 to 18% reported in a previous literature review.¹² The New Zealand Mental Health Survey found community-dwelling older people (age ≥65) had a 12 month suicide attempt prevalence of 0.1%. Therefore, our 12 month repeat self-harm rate is over a hundred times higher than the general rate in the community. Older people with a history of self-harm represent a very high-risk group for repeated self-harm behaviour.

It has widely been reported in the literature that mood disorders, in particular depression, are strongly associated with suicide and suicide attempt, regardless

of age.^{8,9,11,17,20} In our study, 50% of cases fulfilled criteria for a diagnosis of depression at the time of self-harm, with a further 14% displaying symptoms of depression without a definitive diagnosis. Despite this high prevalence of mental illness, only 39% of cases were receiving care from the mental health services at the time of self-harm, highlighting potential detection/screening difficulties for this population group in the primary care sector. Suicide prevention and risk assessment at primary care level may provide an opportunity to engage and assess this population, thereby improving clinical management of high-risk individuals.

We found perceived disability and/or suffering due to physical illness was commonly identified as a background stressor of self-harm. A previous case-control study found that older people (age ≥65) who had attempted suicide had a higher rate of medical illnesses as measured by the Cumulative Illness Rating Scale.²¹ Other studies have also shown an association of physical illness and suicide attempt. For example, Allebeck and Bolund found an increase in suicide attempt rate and a diagnosis of cancer in men aged 60–69 (SMR=2.3, 95% CI=1.4–3.5) and aged 80–89 (SMR=2.7, 95% CI=1.6–4.5), but not in other groups (men aged 70–79; women aged 60–89).²²

In a 2005 study, the diagnosis of malignancy (along with stroke, diabetes mellitus, arthritis and bone fracture) was associated with an increased risk of attempted suicide in older people, but this association was not found in an earlier Japanese study.^{23,24} Another 2006 study investigated the life-time history of suicide attempts and coronary artery disease in people aged 65 years and older who reported a significant association between suicide attempts and coronary artery disease, even after depression was taken into account.²⁵

Other studies have suggested that the association between physical illness and suicide is seldom direct, but is largely mediated through mood and other mental health factors.^{26,27,28} Compared to the international literature on physical illness and its relationship to suicidal ideation or suicide, the literature on physical illness and self-harm attempts in older people is limited.

Several limitations to the study design have reduced the strength of the current

study. Firstly, although this study reported all self-harm cases in a 3-year period, the sample size was small and the sample was drawn from one location. Our findings may therefore not be generalisable to other parts of New Zealand. However, the proportion of older people in our region is similar to that of the proportion in the New Zealand population. Secondly, incomplete medical records saw a proportion of the data set missing (reported as “unknown” in the tables). In addition, some of the records lacked comprehensiveness and specificity. Thirdly, the diagnoses of depression, dementia, bipolar disorder and other psychotic disorders were based on the mental health clinicians’ clinical impressions, and not on standardised diagnostic classifications (eg, DSM, ICD). Further prospective studies, with a larger sample size and including other locations in New Zealand, will be useful to examine the causal relationships with the variables we have identified in this study.

Despite these limitations, this study has highlighted the importance of perceived physical illness and depression in older people presenting with self-harm, and this group of older people represents a very high-risk group of repeated self-harm, and possibly suicide. Along with the international literature on late-life suicide behaviour, our findings can be used to inform a number of intervention points to address self-harm and suicide in older people. These include:

- i. Routine screening of depression and suicide risk in older people with chronic medical conditions in primary care and hospital specialist services.
- ii. Assertive treatment of depression in primary care.
- iii. Better integration between mental health services, geriatric medicine, primary care and hospital specialist services for older people with physical illnesses and depression, particularly those with suicide risk.
- iv. Limiting the amount of prescription medication to at-risk older people.
- v. Active follow-up and treatment for older people following an episode of self-harm, including the use of evidence-based psychological treatment for late-life depression (eg, cognitive behavioral therapy, interpersonal psychotherapy and problem solving therapy) to assist older people to adjust and adapt to their physical illnesses.

In coming decades, the elderly population in New Zealand will continue to increase. More work is needed to address depression-related morbidity and mortality in this vulnerable group. Improving our current understanding of late-life suicidal behaviour is required for the development of age-specific clinical services and suicide prevention strategies. Furthermore, identifying the factors associated with late-life suicidal behaviour can improve the identification of at risk older people and their clinical management.

Competing interests: Nil

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