Suicide Behaviour in a Clinical Sample of Children and Adolescents in New Zealand

Sarah Fortune

University of Oxford Centre for Suicide Research

Fred Seymour & Ian Lambie

University of Auckland

Treating young people at high risk for suicide has been identified as a priority area for development in mental health services. This study aimed to establish the prevalence of suicide ideation and suicidal behaviour in a child and adolescent mental health service and examine if children and adolescents with deliberate self-harm (DSH) were different from those who had not engaged in DSH in terms of individual and family risk factors. A file audit was conducted of 100 clients in a South Auckland service. Just under half of the clients (48%, N = 48) had engaged in DSH at the time of initial assessment, a further 16% (N = 16) had expressed suicide ideation without DSH. Children and adolescents who had engaged in DSH and/or had suicide ideation were older, had more maternal substance abuse, more family history of offending, were more likely to have been sexually abused, used more substances themselves, and were more likely to have previous episodes of DSH.

Suicide is of major concern in New Zealand. In 2000, the most recent year for which standardised statistics are available, 96 young people between the ages of 15 and 24 years died by suicide, of whom 81 were young men. New Zealand continues to have the highest rate of male youth suicide deaths among OECD countries (18.1 per 100,000 population) and our young women are defying international trends with increasing rates of suicide in recent years (New Zealand Health Information Service, 2003).

In addition, more than fifteen hundred adolescents per year receive hospital treatment following deliberate self-harm (DSH) (New Zealand Health Information Service, 2001, 2003). Up to 90% of adolescents engaging in DSH do not present to hospital following deliberate self-harm (Hawton, Rodham, Evans, & Weatherall, 2002), or present to General Practitioners (GPs), so official statistics are likely to significantly underestimate the actual rates of DSH.

Many young people consider suicide at some point in their lives, a significantly smaller number make suicide attempts, and even fewer die as a result. DSH may occur in the presence of suicidal thoughts, it may occur with or without the intention to die, or it can occur independently of suicidal thoughts. The term "self mutilation" is often used to describe the latter behaviour (Sakinofsky, 2000), and is frequently characterised by cutting behaviour, although burning is also common. Such acts of DSH are thought to reduce anger, tension or dissociative numbness. Regardless of intention or function, DSH is associated with increased risk of suicide, and for this reason, authorities such as the World Health Organisation (WHO) and others include any form of DSH as suicidal

behaviour (Cantor & Neulinger, 2000; Hawton & van Heeringen, 2000).

A further reason for considering any DSH as being within the suicide behaviours spectrum is that establishing the motives or intent for DSH is often difficult, regardless of the method used by the child or adolescent (Hawton & van Heeringen, 2000). Adolescents who engage in DSH often appear to be ambivalent about suicide or may report a number of reasons for engaging in DSH (Rodham, Hawton, & Evans, 2004). Fluctuating cognitive states can make it difficult to access clear information from adolescents about their suicide behaviour and intent, particularly when seeking this information retrospectively. Young people are known to underestimate risks (Wagner, Wong, & Jobes, 2002) and habitually engage in behaviours that carry high risk. Thus, a child or adolescent may not intend to die but selects a method that is lethal, or conversely, they may intend to die but select a method that is relatively benign (Bagley & Ramsay, 1997). However, it appears that once they actually engage in DSH behaviour, they cross some attitudinal and behavioural line, and are more likely to engage in this behaviour again (Goldston et al., 1999).

Epidemiological studies in New Zealand, and overseas, have identified risk factors associated with suicide behaviour among children and adolescents in the general population across biological, demographic, cognitive, environmental and mental health domains. A history of past suicide behaviour remains the most powerful and

clinically relevant predictor of eventual suicide (Andrews & Lewinsohn, 1992; Brent et al., 1993; Isometsä & Lönnqvist, 1998; Suokas & Lonnqvist, 1991). Other risk factors include familial and individual psychopathology, personal and familial substance abuse, delinquent and offending behaviour, personality characteristics such as impulsivity and family dysfunction such as loss, neglect and sexual abuse (Beautrais, 2000; Hawton & van Heeringen, 2000). The few studies which have been conducted investigating these risk factors in clinical populations have found that some, at least, of these risk factors also apply to that population (Groholt, Ekeberg, Wichstrom, & Haldorsen, 2000).

New Zealand has a well developed tradition of epidemiological data about adolescents who engage in suicide behaviour (e.g., Beautrais, 2000, 2003; Feehan, McGee, & Williams, 1993; Fergusson & Lynskey, 1995) and a small number of studies with selected populations (e.g., Carlton & Deane, 2000; Coggan & Bennett, 2001). However, there are no studies of outpatient clinical populations in New Zealand. Thus, it is not known how prevalent suicide ideation and DSH are among children and adolescents seen at outpatient mental health services or to what extent the risk factors observed in the general population apply to this population.

Establishing the prevalence of suicide related behaviours and the characteristics of children and adolescents presenting to mental health services with suicide behaviours is an important step in the development of suicide prevention services. High risk clinical populations deserve greater research attention given the fact that primary prevention programmes targeted at the general adolescent population have not yet been proven efficacious in reducing suicidal behaviour (Overholser, Hemstreet, Spirito, & Vyse, 1989; Shaffer & Gould, 2000). Child and adolescent mental health services in New Zealand are required to give priority to those with the most serious mental health difficulties and disabilities. Given the association found in community studies between psychopathology and suicide behaviour (e.g., Beautrais, 2000; Gould, Greenberg, Velting, & Shaffer, 2003) it can be expected that

a mental health service population will include many clients with present or past DSH behaviour. Mental health policy documents concur that treating young people at high risk of completing suicide is a priority area for development (Blueprint for Mental Health Services in New Zealand, 1998; New Zealand Youth Suicide Prevention Strategy, 1998). Early intervention with those displaying suicidal behaviours appears to be the most promising strategy for preventing death by suicide (New South Wales Child Death Review Team Report, 2003).

The following study aimed, firstly, to establish the prevalence of suicide ideation and DSH among children and adolescents attending an outpatient mental health service. Consistent with similar services elsewhere, the upper age limit for adolescents in this clinical population was 18 years. Given their high rates in the general population, it was expected that rates of suicide ideation and DSH would be high, and if so, would confirm these problems as priorities for both assessment and therapy efforts in mental health services.

The second aim was to examine if children and adolescents with suicidal ideation and/or DSH were different from other children and adolescents admitted to the same mental health service in terms of individual and family risk factors which are known from previous research to carry a high risk of death by suicide. Previous histories of DSH and previous suicide ideation were expected to feature more strongly in the suicide/ideation group. Other risk factors as established in epidemiological research, including familial and individual psychopathology, personal and familial substance abuse, delinquent and offending behaviour, family disruption and child sexual abuse, could be expected to also be present in the group of children and adolescents where suicide behaviours were not a part of their presentation. However, whether or not there are significant differences in these risk factors between the two groups is not known. If any of the above factors were found to have particularly strong associations with suicide ideation and DSH, this would indicate priorities for both assessment and therapy with this population.

In most of the analyses conducted in this study suicidal ideation and DSH are combined, partly due to the relatively small sample size precluding analysis of these as separate groups. In addition, their combination is justified by the fact that suicide ideation and DSH frequently co-occur, and both are associated with suicide risk. Furthermore, as noted above, there are precedents established by WHO and other researchers to include these in the general descriptor, "suicide behaviours".

Method

Setting and Participants

Catchment area: This study is based on a retrospective audit of 100 clinical files at a public outpatient child and adolescent mental health service in South Auckland, New Zealand. The catchment area for this service is populated by more than 400,000 of which more than one third are under 20 years. At the last census European/ Pakeha made up 52% of the community, Pacific peoples 27%, Maori 17% and Asians 15% of the community. The rates of unemployment (10.1% in this area vs. 7.5% nationally), single parent families (23% vs. 19%), number of people living in each house (3.3 vs. 2.7) and proportion of adults with no educational qualifications (29% vs. 27.6%) are higher in this community compared with other parts of New Zealand (Statistics New Zealand, 2002).

The Clinic: A multidisciplinary team including child psychiatrists, clinical psychologists, psychiatric nurses, social workers and family therapists work with children, adolescents and their families who represent the 3-5% of the population in greatest need of psychiatric services. Children and adolescents up to the age of 20 years (if still in school) are treated using a combination of crisis interventions, family therapy, group therapy, medication and individual therapy. Attempts are made to involve the wider systems of care for the young person including the family, school, social work agency, police and health care providers with which they have contact. Inpatient admissions are possible at a regional child and adolescent psychiatric unit.

Selection of participants: A list was compiled of clients referred to

the service over a two year period. Referrals declined by the clinic were removed yielding a list of 1028 clients. A list of random numbers was generated and the corresponding clinical files were included in the study. A total of 222 clients files were reviewed in order to achieve the sample of 100 client files, since 41% of clients referred to the service did not attend for various reasons, 6% were outside the study parameters (such as being too old as the maximum age for inclusion was 18 years, or under the care of the Early Intervention for Psychosis team), and 9% met criteria for inclusion but the clinical case notes could not be located.

Procedure and Measures

The primary investigator reviewed the entire clinical file of each client. Data about risk factors associated with suicide behaviour were coded according to operational definitions used in similar studies both nationally (Beautrais, 2000; Fergusson & Lynskey, 1995, 1996; Fergusson, Woodward, & Horwood, 2000) and internationally (Goldston et al., 1999). Due to the use of archival data, data reporting were based on the cases for which any given risk factor had been documented as either present or absent, with missing data excluded from the analysis.

Maternal/paternal alcohol abuse was coded positively if the client, parent or caregiver reported a parental alcohol problem. Personal substance use was defined as self reported use on more than one occasion. Early substance use was defined as a self reported, established pattern of substance use prior to the age of 14 years. A family history of mental health disorder was coded positively if client, parent or caregiver reported a mental health difficulties either treated or untreated. A history of child protection service involvement was scored if the client, caregiver or referral agent reported that the client or sibling had been the subject of such involvement. Childhood sexual abuse was coded positively if client, parent or caregiver reported the client had a history of childhood sexual abuse. School problems were coded positively if the client, caregiver or referral agent reported school based difficulties including falling grades,

wagging, swearing at teachers or similar activities which would prompt disciplinary action or intervention by school staff. Exposure to suicide was defined as self reported exposure to suicide deaths in the family, group of friends or acquaintances, or death by suicide in the prior two years in the school currently attended by the client. Clinicians informally gained this knowledge during the contact with community members and schools. Psychiatric diagnoses were not generated by clinicians for most clients included in this study and are therefore not included in this data set.

Clients were allocated to one of two categories (suicide behaviour/no suicide behaviour) based on their behaviour at the time of first admission as reported by the referral agent/s, parents and/or the identified client. That is, to be included in the category of *suicide behaviour* the behaviour was present at the time of referral, or in the recent period leading up to the referral (typically, one month). The category of suicide behaviour included *deliberate self-harm (DSH)* and *suicide ideation* but the relatively small sample size precluded analysis of these as separate groups. *Deliberate self-harm* was defined as any form of behaviour, regardless of intent including cutting, overdosing, hanging, self-strangulation and running into traffic. *Suicide*

ideation was defined as thoughts about wishing to kill oneself, making plans of when, where and how to carry out the suicide, and thoughts about the impact of one's suicide on others (Shaffer & Pfeffer, 2001). Fleeting thoughts of self-harm or threats in the context of a tantrum without any previous or subsequent ideation were not considered sufficient to meet this criteria. *No suicide behaviour* was defined as no evidence of suicide ideation or deliberate self-harm at the time of the initial assessment.

A history of previous DSH or suicide ideation was coded positively if the client, parent/caregiver or referral agent reported a previous episode of DSH, prior to the index episode of DSH.

A coder, who was blind to the previous coding decisions, undertook a 10% re-code of clinical files. Good inter-observer agreement was achieved with 91.38% concordance overall (Robson, 2002) and good to excellent Cohen's Kappa coefficients for individual items, ranging from K = .62 – K = 1.00 (Fliess, 1981).

Results

Participants

Just under half of clients (48%, n = 48) had engaged in DSH by the time of initial assessment, a further 16% (n

Table 1. Demographic information

	Suicide behaviour N	No suicide behaviour N	Total N	Total N	Pearson Chi Square Value	DF	P
Gender				100	2.53	1	.144
Male	25	20	45				
Female	39	16	55				
Ethnicity				100	3.59	3	.306
Pakeha	29	16	45				
Maori	19	12	31				
Pacific Island	15	5	20				
Asian	1	3	4				
SES				85	3.77	3	.293
Unemployed	23	7	30				
Professional	12	11	23				
Tradesman	11	6	17				
Semi/unskilled	11	4	15				

= 16) had expressed suicide ideation without known DSH. Deliberate self-poisoning (n = 16), self-laceration (n = 14) and attempted hanging (n = 14) were the most commonly reported methods of DSH. Presenting problems for those who had not engaged in suicide behaviour included psychosis, anxiety, disruptive behaviour and developmental disorders.

As shown in Table 1, just over half (55%) of the 100 clients were female and 46% described themselves as Pakeha/Caucasian, 31% as Maori and 20% as Pacific Island. The parents of more than one third of clients (35%, *n* = 30) were unemployed. Chi square analyses revealed that children and adolescents with suicidal behaviour were not significantly different from those with no suicide behaviour.

Comparison of children and adolescents with and without suicidal behaviour

The mean age at time of referral across the total sample was 13.95 years (*SD* = 2.52). Suicidal children and adolescents were on average significantly older than their non-suicidal counterparts ($F_{(1,96)}$ = 5.87, *p* = .017). The two groups did not vary significantly with regard to overall family size or duration of parental separation, as shown in Table 2.

As shown on Table 3 maternal alcohol misuse/abuse data were available for 39 cases, and revealed this was significantly higher among the mothers of children and adolescents with DSH and suicide ideation, compared with those free from suicide behaviour (χ^2 = 4.79, *df* = 1, Exact *p* = .030). Insufficient data were available to comment on the alcohol consumption of fathers. Many families (n = 34 of the 82 for which data were available) reported prior experiences of mental health problems but no statistically significant differences were identified across the groups on this variable. Children and adolescents in which there was a family history of offending behaviour were significantly more likely to be presenting with suicide behaviours (χ^2 = 12.74, *df* = 1, *p* = .000). This information was available for all 100 cases.

A history of childhood sexual abuse (CSA) was reported for 30% (n =

Table 2. Family characteristics of children and adolescents

	Suicide behaviour			No suicide behaviour			
	Mean	SD	N	Mean	SD	N	F
Age at time of referral	14.40	1.71	62	13.14	3.41	35	5.87*
Family size (all siblings)	3.19	1.42	64	3.19	1.56	36	.001
Months of parental separation	100.11	49.35	38	97.73	59.42	15	.022

* p <.05

Table 3. Risk factors associated with suicide behaviour in children and adolescents

	Suicide behaviour N	No suicide behaviour N	Total N	Total N	Pearson Chi Square Value	DF
Maternal substance abuse				39	4.79*	1
Yes	13	1	14			
No	15	10	25			
Positive family history of mental health difficulties				82	0.74	1
Yes	23	11	34			
No	28	20	48			
Family history of offending behaviour				100	12.74***	1
Yes	36	7	43			
No	28	29	57			
Childhood sexual abuse				100	4.76*	1
CSA known/reported	24	6	30			
No form of CSA reported	40	30	70			
Child protection involvement				85	1.50	1
Yes	23	8	31			
No	3	21	54			
Exposure to suicide deaths				49	2.59	3
No exposure	6	1	7			
Suicide in the family	12	1	13			
Suicide by friend/ acquaintance	4	0	4			
Suicide at school attended	19	6	25			
Previous DSH				95	11.40**	1
No previous DSH	33	28	61			
Previous DSH	30	4	34			

* p <.05   ** p < .01   *** p < .000

30) of all children and adolescents and was significantly higher among those thinking about suicide or engaging in DSH, compared to those free from these behaviours (χ^2 = 4.76, df = 1, *p* = .023). There was no significant difference between groups as to whether they had involvement with the statutory child protection agency.

Data about potential exposure to deaths by suicide among the social and familial systems of the identified clients were available for 49 cases. Just over half of the clients for whom data were available (n = 25) attended a school where at least one student had died

by suicide in the previous two years. Suicide of a family member affected 13 children and adolescents. There were no significant differences between the groups in exposure to suicide deaths.

Data were available for 95 cases on previous history of DSH. Children and adolescents presenting with suicide behaviours were significantly more likely to report a previous history of DSH, while clients currently free from suicide behaviour were less likely to have a history of DSH ($\chi^2 = 11.40$, df $= 1, p = .001$).

Data were available for a little over half of all cases on drug and alcohol use. As shown in Table 4, children and adolescents with suicide behaviours had significantly higher rates of early marijuana use ($\chi^2 = 3.64$, df $= 1$, p $= .05$) and early cigarette use ($\chi^2 = 7.38$, df $= 1$, Exact p $= .007$) compared with those free from suicidal behaviour.

Combined factors

A discriminant function analysis was conducted with suicidal behaviour as the dependent variable (coded as no suicide/suicide), and age at referral, gender, history of childhood sexual abuse and a previous history of DSH as predictor variables. These predictor variables were selected because they had emerged from the results as having significantly different rates between the two groups with good coverage of data for these variables. The independent variables were entered together with prior probabilities of group membership based on group size. A total of 92 cases were analysed.

Univariate ANOVA indicated those clients with suicide ideation and DSH differed significantly from those free from suicide behaviours, on one predictor variables; a history of previous DSH. A single discriminant function was calculated; the value of this function was significantly different for suicidal and non-suicidal clients ($\chi^2 = 14.17$, df $= 4, p = .007$). The correlations between predictor variables and the discriminant function suggests that age and a previous history of DSH were the best predictor of thinking about suicide or having engaged in DSH. A previous history of DSH was negatively correlated with the discriminant function value, suggesting that those with previous episodes of DSH were less likely to currently be free from suicide behaviour. A history of CSA was positively correlated with the discriminant function, indicating that clients with such a background were more likely to present with suicide behaviours.

Overall the discriminant function analysis successfully predicted group membership for 73.9% of clients, with accurate predictions made for 56/61 (91.8%) of children and adolescents who had suicide ideation or DSH. The remaining 5 (5/61) clients in this group were misclassified as being free from suicide behaviour. This model has a relatively high false positive rate with 19/31 clients who were recorded as free from suicide behaviour being classified as belonging in the suicidal group and the remaining 12/31 clients classified correctly as being free from suicide behaviour.

Discussion

The systematic file audit of 100 clients attending a New Zealand child and adolescent mental health service revealed that the rates of suicide behaviour identified among this population were high with nearly half of clients reporting DSH (48%) at the time of index assessment and a further 16% expressing suicide ideation with no evidence of DSH. Community based studies show very low levels of help seeking behaviour among suicidal adolescents in the community (Hawton et al., 2003). The high rate of suicide behaviours in this population suggests that clinicians can maximise the opportunity for detection and intervention of suicidal behaviour by paying close attention to suicide risk in all children and adolescents presenting to mental health services, regardless of the reason for referral. In addition, the high rate of suicide behaviour observed in this clinical population, compared with young people in the community, confirms that mental health services represent an important opportunity for suicide prevention (Blueprint for Mental Health Services in New Zealand, 1998; New Zealand Youth Suicide Prevention Strategy, 1998) (New South Wales Child Death Review Team Report, 2003).

Clinicians are often faced with large amounts of complex and contradictory information about the current distress of the child or adolescent, and are requested to make estimations of the future risks they pose to themselves or others. It may be expected that some characteristics found to distinguish suicidal from non-suicidal adolescents in the general population do not maintain their predictive power when transposed to a clinical population (Fergusson & Lynskey, 1995; Harkavy, Asnis, Boeck, & di Fiore, 1987; Kosky, Silburn, & Zubrick, 1990) due to homogeneously high loadings of biopsychsocial risk factors in such populations. However, the discriminant function analysis

Table 4. Early substance use defined as an established pattern of use before 14 years among children and adolescents

	Suicide N	No suicide N	Total N	Total N	Pearson Chi Square Value	DF
Early alcohol use				54	3.22	1
Yes	21	4	25			
No	18	11	29			
Early marijuana use				52	3.64*	1
Yes	18	3	21			
No	19	12	31			
Early cigarette use				43	7.38**	1
Yes	18	1	19			
No	14	10	24			

* p <.05   ** p < .01   *** p < .000

conducted here confirms that clinicians should pay particular attention to a previous history of DSH, which is widely cited in the literature as a predictor of future suicide behaviour (Beautrais, 2000; Vajda & Steinbeck, 2000) and almost always recommended for inclusion in a clinical assessment.

Many of the other risk factors for suicidal behaviours distinguished in epidemiological research (e.g., Beautrais, 2003; e.g., Shaffer & Greenberg, 2002) were also present in this clinic population. They were also present for many of those with no evidence of suicidal behaviour. That is, generally families presenting to this mental health service were struggling to cope with a number of biopsychosocial stressors. However, children and adolescents with suicidal behaviours had even higher rates of difficulty compared with those free from suicide ideation or DSH. In particular, differences were found between groups in respect of maternal alcohol abuse/misuse, a family history of offending, client early use of alcohol and drugs, and client history of CSA. Furthermore, the results indicate that suicide behaviours are not the result of an understandable response to a single life event, but rather, the outcome of multiple risk factors, often accumulated over a lifetime.

The results from this research emphasise the importance of enquiry about, and where applicable, intervention for sexual abuse. This is an important finding given that mental health services in New Zealand are not contracted to see young people for whom sexual abuse is considered the main presenting problem. Such people are typically referred to private practitioners who may have less support to deal with suicidal behaviours than exists within a publicly funded mental health service. Similarly the rates of substance misuse and family involvement with prison services suggests that the families of suicidal children and adolescents have multiple needs and suggests that an integrated model of care is more likely to succeed. This concept is at odds with the fragmentation of specialist drug and alcohol and forensic services for young people in addition to the lack of integration between child and adult mental health services. Suicidal young

people and their families do not consider their lives in a compartmentalised manner, so services arranged in this way may not meet their needs.

In this study suicidal ideation and DSH were combined in the analyses, with the justification being the relatively small sample size and that both provide significant risk for suicide. However, there are clinicians and researchers who consider these to be distinct behaviours. In particular, "self mutilation" has been distinguished from other forms of DSH where the intention appears to be to reduce anger, tensions or dissociative numbness (e.g., Sakinofsky, 2000). A larger scale study with more participants and repeated interviews or repeat examination of clinical file data may allow better understanding of the relationships between ideation, DSH, and the intention to die. In addition such a longitudinal study might allow the elucidation of factors that contribute to reducing risk, including those factors in the young person's environment and in the treatment provided by mental health practitioners.

The main limitation of a retrospective file audit is the reliance on extant data, which is susceptible to significant variations in the methods and level of detail reported by various clinicians. The training of mental health staff emphasises the systematic evaluation of a client and the recording of the presence *and* absence of certain key features, but this is not consistently carried out in mental health settings. The high Kappa scores indicate reasonable stability in the reviewers interpretation of the existing data, but one cannot conclude that data not recorded actually indicates the absence of certain factors. There were high rates of reporting in this sample on previous DSH, suicidal thoughts, CSA, family history of mental illness and offending, and child protection agency involvement, but much lower rates of reporting on parent and client substance abuse, and exposure to suicide. Accordingly, the reliance that can be placed on data related to these factors is reduced. Nevertheless, while cognisant of the hierarchy of research design with regard to power, sample size and control for confounds, file audits make an important contribution to understanding the suicide behaviour

among young people.

The characteristics of a clinical sample, which is selected by virtue of being both referred to, and attending, a particular mental health service, means that the characteristics of these young people will reflect the local context. There will be some variations according to geographical area and the particular referral and intake policies of the setting, and these factors will affect the generalisability of the findings. However, the very high rates of suicide behaviours in the present study suggest that while rates may well be lower in other mental health settings, these behaviours are likely to be present in a significant number of clients. A replication study in another child and adolescent mental health service in New Zealand would allow evaluation of these issues.

The present data indicates that the development of systemic interventions that cross service boundaries is a priority for mental health services in addition to the ongoing refinement of treatment interventions which target more adaptive methods of coping to replace suicide behaviours. Children and adolescents who present at mental health services bring with them an array of negative experiences, both past and present, and they often live within family environments where adults/parents carry significant personal problems themselves. No single treatment package will fit all. The successful reduction of suicide behaviours is likely to include individualised interventions that target both the young person themself, as well as their family/caregivers and community context of peers and school/ employment.

References

Andrews, J. A., & Lewinsohn, P. M. (1992). Suicidal attempts among older adolescents: Prevalence and co-occurrence with psychiatric disorders. *Journal of the American Academy of Child and Adolescent Psychiatry, 31*, 655 - 662.

Bagley, C., & Ramsay, R. (1997). *Suicidal behaviour in adolescents and adults*. Aldershot: Ashgate.

Beautrais, A. (2000). Risk factors for suicide and attempted suicide among young people. *Australia and New Zealand Journal of Psychiatry, 34*, 420 - 436.

Beautrais, A. (2003). Suicide and serious

suicide attempts in youth: a multiple group comparison study. *American Journal of Psychiatry, 160,* 1093 - 1099.

Beautrais, A. (2003). Suicide in New Zealand II: a review of risk factors and prevention. *The New Zealand Medical Journal, 116,* 672 - 685.

Brent, D., Perper, J. A., Moritz, G., Allman, C., Roth, C., Schweers, J., et al. (1993). Familial risk factors for adolescent suicide: a case-controlled study. *Acta Psychiatrica Scandinavica, 89,* 52 - 58.

Cantor, C. H., & Neulinger, K. (2000). The epidemiology of suicide and attempted suicide. *Australia and New Zealand Journal of Psychiatry, 34,* 370 - 387.

Carlton, P. A., & Deane, F. P. (2000). Impact of attitudes and suicidal ideation on adolescents' intentions to seek professional psychological help. *Journal of Adolescence, 23,* 35 - 45.

Coggan, C., & Bennett, S. (2001). Attempted suicide among young people. *Health Research Council of New Zealand, 38.*

Feehan, M., McGee, R., & Williams, S. M. (1993). Mental health disorders from age 15 to age 18 years. *Journal of the American Academy of Child & Adolescent Psychiatry, 32,* 1118-1126.

Fergusson, D. M., & Lynskey, M. T. (1995). Suicide attempts and suicidal ideation in a birth cohort of 16-year-old New Zealanders. *Journal of the American Academy of Child and Adolescent Psychiatry, 34,* 1308-1317.

Fergusson, D. M., & Lynskey, M. T. (1996). Adolescent resiliency to family adversity. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 37,* 281-292.

Fergusson, D. M., Woodward, L., & Horwood, L. J. (2000). Risk factors and life processes associated with the onset of suicidal behaviour during adolescence and early adulthood. *Psychological Medicine, 30,* 23 - 39.

Fliess, J. L. (1981). *Statistical methods for rates and proportions.*New York: Wiley.

Goldston, D. B., Sergent Daniel, S., Reboussin, D. M., Reboussin, B. A., Frazier, P. H., & Kelley, A. E. (1999). Suicide attempts among formerly hospitalized adolescents: A prospective naturalistic study of risk during the first 5 years after discharge. *Journal of the American Academy of Child & Adolescent Psychiatry, 38,* 660-671.

Gould, M., Greenberg, T., Velting, D. M., & Shaffer, D. (2003). Youth suicide risk and preventative interventions: a review of the past 10 years. *Journal of the American Academy of Child & Adolescent Psychiatry, 42,* 386 - 405.

Groholt, B., Ekeberg, O., Wichstrom, L., & Haldorsen, T. (2000). Young suicide attempters: A comparison between a clinical and an epidemiological sample. *Journal of the American Academy of*

Child & Adolescent Psychiatry, 39, 868-875.

Harkavy, F. J., Asnis, G. M., Boeck, M., & di Fiore, J. (1987). Prevalence of specific suicide behaviours in a high school sample. *American Journal of Psychiatry, 144,* 1203 - 1206.

Hawton, K., Hall, S., Simkin, S., Bale, E., Bond, A., Codd, S., et al. (2003). Deliberate self-harm in adolescents: a study of characteristics and trends in Oxford, 1990-2000. *Journal of Child Psychology & Psychiatry & Allied Disciplines, 44,* 1191-1198.

Hawton, K., Rodham, K., Evans, E., & Weatherall, R. (2002). Deliberate self harm in adolescents: Self report survey in schools in England. *British Medical Journal, 325,* 1207-1211.

Hawton, K., & van Heeringen, K. (Eds.). (2000). *The international handbook of suicide and attempted suicide.*Chichester: Wiley.

Isometsä, E. T., & Lönnqvist, J. K. (1998). Suicide attempts preceding completed suicide. *British Journal of Psychiatry, 173,* 531 - 535.

Kosky, R., Silburn, S., & Zubrick, S. R. (1990). Are children and adolescents who have suicidal thoughts different from those who attempt suicide? *Journal of Nervous and Mental Disorders, 178,* 38 - 43.

Mental Health Commission. (1998). *Blueprint for mental health services. How things need to be.*Wellington: Mental Health Commission.

Ministry of Health. (1998). *New Zealand youth suicide prevention strategy: In our hands/kia piki te ora o te taitamariki.* Wellington.

New South Wales Child Death Review Team Report. (2003). *Suicide and risk taking deaths of children and young people*: NSW Commission for Children and Young People.

New Zealand Health Information Service. (2001). *Selected morbidity data for publicly funded hospitals 1998/1999.* Wellington: Ministry of Health.

New Zealand Health Information Service. (2003). *Suicide facts. Provisional 2000 statistics (all ages).*Wellington: Ministry of Health.

Overholser, J. C., Hemstreet, A. H., Spirito, A., & Vyse, S. (1989). Suicide awareness programs in the schools: Effects of gender and personal experience. *Journal of the American Academy of Child and Adolescent Psychiatry, 28,* 925-930.

Robson, C. (2002). *Real world research* (Second ed.). Oxford: Blackwell.

Rodham, K., Hawton, K., & Evans, E. (2004). Reasons for deliberate self-harm: comparison of self-poisoners and self-cutters in a community sample of adolescents. *Journal of the American Academy of Child & Adolescent*

Psychiatry, 43, 80 - 87.

Sakinofsky, I. (2000). Repetition of suicide behaviour. In K. Hawton & K. van Heeringen (Eds.), *The international handbook of suicide and attempted suicide* (pp. 385 - 404). Chichester: Wiley.

Shaffer, D., & Gould, M. (2000). Suicide prevention in schools. In K. Hawton & K. van Heeringen (Eds.), *The international handbook of suicide and attempted suicide* (pp. 645 - 660). Chichester: Wiley.

Shaffer, D., & Greenberg, T. (2002). Suicide and suicidal behavior in children and adolescents. In D. Shaffer & B. D. Waslick (Eds.), *The many faces of depression in children and adolescents* (Vol. 21, no2, pp. 129-178). Washington: American Psychiatric Publishing, Inc.

Shaffer, D., & Pfeffer, C. R. (2001). Practice parameter for the assessment and treatment of children and adolescents with suicidal behavior. *Journal of the American Academy of Child and Adolescent Psychiatry, 40,* 495 - 499.

Suokas, J., & Lonnqvist, J. K. (1991). Outcome of attempted suicide and psychiatric consultation: risk factors and suicide mortality during a five year follow-up. *Acta Psychiatrica Scandinavica, 84,* 545 - 549.

Vajda, J., & Steinbeck, K. (2000). Factors associated with repeat suicide attempts among adolescents. *Australian & New Zealand Journal of Psychiatry, 34,* 437 - 445.

Wagner, B. M., Wong, S., A, & Jobes, D. A. (2002). Mental health professionals' determinations of adolescent suicide attempts. *Suicide & Life-Threatening Behavior, 32,* 284 - 300.

Author Notes
Sarah Fortune, Post Doctoral Research Fellow, University of Oxford Centre for Suicide Research
Fred Seymour and Ian Lambie, Department of Psychology, University of Auckland.

Address for correspondence:
Assoc. Professor Fred Seymour
Department of Psychology
University of Auckland
Private Bag, Auckland.
Phone 09 373 7599 (xt.88414)
Email: f.seymour@auckland.ac.nz