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ABSTRACT

Each year about 30 young South Australians die from suicide. Schools have a responsibility to help address the mental health concerns of students to ensure the development of mature and productive citizens for the future. The program outlined in this booklet is designed to help reduce the suicidal behaviors in young people. The report summarizes the results from the first 2 years of the Early Detection of Emotional Disorders Program implemented in 17 high schools in Australia. Contents include: (1) "Introduction"; (2) "Program Design and Implementation"; (3) "Student Profile"; (4) "Families and Parenting"; (5) "Mental Health"; (6) "Delinquent Behaviour"; (7) "Suicidality"; (8) "Vulnerable Students"; and (9) "Concluding Remarks". (Contains a glossary of terms and 91 references.) (JDM)

CAMHS

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Early Detection of Emotional Disorders in South Australia

THE FIRST TWO YEARS

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The tremendous assistance and goodwill of principals, teachers, counsellors, students and parents in the 17 schools agreeing to participate in the program is gratefully acknowledged. Special thanks also to the many 'volunteers' coopted to assist with the basic day to day tasks of implementing the program.

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FOREWORD

Each year about 30 young South Australians die from suicide and probably over 1000 young people attempt suicide but fortunately do not succeed. The loss of this young life, which occurs at a rate comparable with the national average, provokes an enormous burden of grief on those who remain. Given the productive years lost it also indirectly affects every member of the community.

Youth suicide is the most severe consequence of emotional difficulties which can be experienced by young people. Less severe consequences for students with emotional disorders include learning difficulties, and a lack of academic and social success at school. Schools have a responsibility to help address the mental health concerns of students to ensure the development of mature and productive citizens for the future.

The Early Detection of Emotional Disorders program is funded for three years by the Australian Government through the National Mental Health Strategy. It has as its overall goal the reduction of suicidal behaviours in young people. This report covers the operation of the first two years of the program. It sets out the aims and objectives of the program and details how it has been implemented across 17 schools in the southern metropolitan and country areas of the State. Around 2000 high school children have participated in the program making it not only one of the largest of its type in this state but also nationally.

The program is an innovative example of how educational and mental health authorities can collaborate to produce better outcomes for schoolchildren. I acknowledge the considerable effort that principals, teachers and school counsellors have made to ensure the best possible implementation of the program. I commend the development of this initiative by mental health practitioners and researchers and look forward to the continued support of all those who have contributed to the program.

Rob Lucas.

Rob Lucas
MINISTER FOR EDUCATION AND CHILDREN'S SERVICES

CONTENTS

1 INTRODUCTION

This report summarises the results from the first two years of the Early Detection of Emotional Disorders program.* This chapter provides a general overview to the development of the program as well as detailing the aims and objectives. Chapter two deals with methodological issues including the research design, the composition of the questionnaire and how the program has been implemented. Chapter three reports basic demographic characteristics of our sample while Chapter four examines students' perceptions of their family and the quality of parenting. The results from the mental health scales used in the program are shown in Chapter 5. Chapter 6 covers delinquency, risk taking and drug use in our student population. The prevalence of suicidal behaviours is addressed in Chapter 7 and comparisons between time 1 and time 2 are made. The identification and assistance offered to 'vulnerable' students is examined in Chapter 8 and, finally, Chapter 9 discusses the future directions for the program.

BACKGROUND TO YOUTH SUICIDE

There has been a world wide increase in deaths in young people from suicide over the last 30 years (Smith & Crawford, 1986), with a doubling of the rate in the United States (Maris, 1985). Australia has a rate higher than the US and ranks fourth of twenty seven in the industrialised world for its youth suicide rate, behind Finland, Canada, and New Zealand (Harrison & Dolinis, 1995). In South Australia, between 160 and 240 people suicide each year and of these some 30 will be young people between 15 and 24 years of age. The 'true' number of suicides may be far higher due to death from suicide being attributed to other causes, such as drug overdoses or car accidents.

Thoughts of suicide, suicide attempts and other self destructive behaviours occur far more often than completed acts of suicide. For example, the rate of adolescent attempts in relation to each death from suicide has been estimated at between 50:1 and 220:1 (Slap et al., 1989). School population surveys of suicidal behaviours suggest that attempters make up around 10% of high school students and that the frequency of suicidal thinking is higher still (Garrison, 1989; Garrison et al., 1991a).

Importantly, suicidal behaviours do not occur at random. They occur in a context of community problems, family dysfunction, poor parenting, academic failure, interpersonal difficulties and recent loss. Specific factors strongly associated with suicidal behaviours include depression, delinquency, a history of drug abuse, alcohol abuse and previous suicidal behaviour (Brent et al., 1993; Shafii et al., 1985).

* In this report, referred to as ED²

THE SOUTHERN CAMHS YOUTH SUICIDE RESEARCH PROGRAM

Over the past eight years, the Southern Child and Adolescent Mental Health Service (CAMHS) Research Unit has conducted a series of studies into adolescent suicidal behaviours. The overall goal of our research program has been to improve our knowledge of suicidal behaviours in young people, so as to reduce the current rate of adolescent suicide through prevention.

Previous work has predominantly been cross-sectional and of a population sampling nature (e.g. Martin, et al., 1993; Pearce & Martin, 1993; Pearce & Martin, 1994; Martin & Waite, 1994). However, the study of risk and protective factors for youth suicide involves the investigation of causal factors. This implies change within an individual from one state to another (Rutter & Pickles, 1990). As a result, our research goals have increasingly been directed towards understanding the *development* of suicidal behaviours.

This current research focus of understanding the development of suicidal behaviours is linked with the goal of constructing an index for predicting suicide. This latter activity has proved to be very difficult because death by suicide is a relatively rare event. Australia, despite a high suicide rate by international standards, has a base youth rate of approximately only 15 per 100,000 (National Injury Surveillance Unit, 1995). Therefore, with a cohort of 2000 students, as in the present study, we might expect only 0.3 students to complete suicide in any year or slightly less than one over the life of the project. In fact, the overall rate is averaged for the 15-24 year age group and climbs steeply over this age range. The real rate for our students, who began at 13.5

years in first year high school, is much lower. To predict that any particular student will complete suicide is therefore an impossible task - what has been described as looking for a needle in a haystack.

Can we make the task of early detection of troubled young people any easier? Extrapolating from the results of previous school surveys, we could expect that at least 160 young people will attempt suicide in each of the second and third years of our program. If only one-third of these are serious enough to warrant medical treatment, this is a sizable problem - particularly if, as we know, each suicide attempt increases the risk for ultimate death from suicide.

In addition, *thoughts* of suicide have been reported as present in almost 50% of young people at any given time, *plans* and *threats* are claimed by about 15%, and *deliberate self-harm* by approximately 30% (Pearce & Martin, 1994). Although the interactions are complex, each of these is associated with claimed attempts. Our reviews of the available literature led us to believe that we should attempt to predict all of these suicidal behaviours as a group and that this would allow us to discover the most troubled young people - those most likely to turn to the option of suicide in times of trouble.

Following this logic, we developed an Adolescent Suicide Questionnaire (the ASQ revised or ASQ-R; Pearce & Martin, 1994). This addresses each of the facets of the suicide spectrum and weights them according to perceived seriousness. There are three parts (yes/no questions, scaling questions, and future estimation questions), which provide us with a total 'potential for suicide' score.

Another departure from the traditional approach taken to suicide risk prediction concerns the comprehensiveness of our measures. In developing scales predictive of suicide, previous work has focused on determining the smallest set of the most statistically predictive variables for attempted suicide (the criterion variable). Often the need to differentiate between risk indicators and risk mechanisms was not recognised and, as a consequence, items in some scales appear idiosyncratic.

In addition, interactions between risk variables (e.g. whether family dysfunction operates to increase risk only in depressed young people), or transactional effects whereby one risk factor increases the likelihood of the occurrence of another (Rutter & Pickles, 1990), were not explored. With the advent of new statistical techniques such as latent variable analysis and structural equation modelling, both possible direct and indirect effects of risk factors are more easily considered.

AIMS AND OBJECTIVES OF THE ED² PROGRAM

The overall purpose of the program is to reduce the numbers of young people engaging in suicidal behaviours, with the belief that there is a continuum of behaviours which leads to attempts and, finally, completion of suicide. What we have tried to develop is a comprehensive bio-psycho-social predictive scale based on all of the risk factors identified from the world literature - including sociodemographic, behavioural, 'state psychological', and relational items. The questionnaire includes items, checklists, questionnaires and socio-demographic factors, well validated in international work, and shown to have strong associations with reported suicidal behaviours in cross-sectional community samples.

There are two major goals of the program. Firstly, to increase our knowledge about the development of emotional disorders and suicidal behaviours in young people. Secondly, to identify those students in the program experiencing emotional disorders or engaging in suicidal behaviours, so that assistance can be provided to them.

The first goal of study is essentially research based. We seek to understand the factors which increase the risks for suicidal behaviours, and the process through which some young people progress from thinking about suicide to actually making an attempt on their life. The research will enable the development of a screening instrument for routine use in schools, toward early identification of students at risk of developing emotional disorders or engaging in suicidal behaviours.

The second goal of the program is to provide assistance to students participating in the program who are currently experiencing emotional disorder or engaging in suicidal behaviours. This second goal of the program arose out of a belief that it would be unethical to undertake the type of research proposed without offering and providing assistance to participants, who in extreme cases might feel they were experiencing life threatening difficulties. This second goal adds considerable complexity to the program. However, as well as benefiting vulnerable students, it is hoped that the information gained from this process will prove useful in determining how to best implement suicide screening programs in schools.

2 PROGRAM DESIGN AND IMPLEMENTATION

This chapter provides an overview of the Early Detection of Emotional Disorders program. It includes sections covering the design of the program and the questionnaire used, and presents basic results relating to the number of students participating in the first two waves of the program.

PROGRAM DESIGN

The research design strategy used in the program is known as a prospective time series study. This involves following the same sample at successive time points, with corresponding increases in the age of the group under survey. Data are collected prospectively which means that subjects are followed in time, as opposed to retrospective data collection which involves extracting multiple measurements on each person from historical records.

In the present study, students complete a self-report questionnaire called the Youth Assessment Checklist (YAC) on three occasions over a three year period. The program began in 1995 (T_1) with Year 8 students (first year high school). Students at T_1 were, on average, 13 years of age in 1995. At T_2 (1996), the sample consisted of these same students now enrolled in Year 9 and, on average, 14 years of age. At T_3, to be conducted during 1997, the sample will comprise the same students who will be in Year 10 and, on average, 15 years of age.

The Year 8 school level was chosen as the program beginning point for a number of reasons. Firstly, the majority of young people are still in school at Year 8. Dropouts begin to occur more frequently in Year 9 and increase significantly from then on, particularly as students achieve the legal school-leaving age of 15. Therefore, starting with Year 8 students provided the opportunity to study the development of emotional disorders longitudinally, with nearly the maximum number of young people in the areas covered by the participating schools.

Secondly, suicide rates and emotional difficulties start to rise rapidly in young people from about 15 years of age (about Year 10). A major aim of the program is to examine the factors influencing the onset and development of emotional disorders / suicidal behaviours in young people. The two year period of study prior to this age theoretically allows for the investigation of causal relationships, and the development of effective strategies for early intervention. Finally, the use of a sample drawn from Year 8, as opposed to an earlier year level, reduces the risk of students being unable to complete questionnaires because of literacy difficulties.

From students completing the YAC at T_1 and T_2, an overall list of 'identified students' was developed. Students identified by us were those with whom we believed a 'clarification interview' should be conducted. The purpose of this interview (carried out by the School Counsellor) was to establish a clear definition of any problems being experienced by the student, and to develop a management plan to address those problems. Counsellors were provided with a training manual which included a list of outside services if referral for further assessment and therapy was necessary. A 'fast tracking' mechanism was implemented in Southern CAMHS to ensure that clients and their families referred from the program were dealt with as expeditiously as possible.

SUBJECT SELECTION

In the southern metropolitan and southern country area, the Fleurieu Peninsula, and the Adelaide Hills, there are 27 government schools with secondary students (Years 8 to 12) comprising an enrolled population of nearly 20,000 students. This constitutes around a third of South Australia's total secondary school population. Following approval from the Department of Education and Children's Services and the Flinders Medical Centre Committee for Clinical Investigations, the principals of 25 schools were approached during the first term of 1994 to seek their permission to undertake the project in 1995. Permission was obtained from 17 principals.

All parents of year 8 students in participating schools received a written explanation of the study and its purpose, with clear explanations of the processes adopted to secure confidentiality. For 16 schools a permission form was enclosed to be returned if consent was **not** granted - a process known as 'assent'. In one school an active consent process was required by the school authorities, whereby parents had to return the form to the school explicitly stating their 'consent'. In this school the lack of a permission form was taken to indicate that parents

did not wish their child to participate in the program. In the remaining 16 schools the lack of a permission form was taken to indicate that parents did not object to their child participating.

The two different methods for gaining student participation in the program produced very different participation rates. Using the 'assent' process, approximately 15% of parents across the two waves of the program returned forms indicating that they did not wish their child to take part in the program. In the one school using the active consent process, the same percentage of parents (15%) returned forms. In effect, the assent process produced a participation rate in schools of around 85% but the active consent process produced participation rates of only 15%. Because of the very low rates achieved by the one school using active consent, the results from this school have been analysed separately and are not presented in this report.

SELF-REPORT QUESTIONNAIRE

The Youth Assessment Checklist (YAC) is an A4 size 16 page, optically scannable, numbered questionnaire. Students identify themselves on the questionnaire by their initials (first, middle and last) and their dates of birth. The research team does not have access to student names. The YAC consists of items relating to demographic characteristics, self assessed academic performance, music preferences, physical and sexual abuse, alcohol and drug use and life events, including experiences of suicide. The YAC also contains a number of social-psychological scales and subscales. These include the:

General Functioning subscale of the Family Assessment Device (FAD-GF)

Influential Relationships Questionnaire (IRQ)

Centre for Epidemiologic Studies-Depression Scale (CES-D)

Hospital Anxiety and Depression Scale (HAD)

Adolescent Suicide Questionnaire (ASQ)

Brief Adolescent Risk-Taking Scale (BARTS)

Self-Reported Delinquency Scale (SRDS, revised)

Beck Hopelessness Scale (BHS)

Rosenberg Self - Esteem Scale (RSES)

Adult Nowicki-Strickland Internal-External Locus of Control Scale (ANSIE)

Further details relating to these scales are provided in later chapters and the glossary section of this report.

QUESTIONNAIRE ADMINISTRATION

Questionnaires at T_1 were administered in the first week of August 1995 (in the beginning of term 3), over two lessons of morning school time. At T_2, administration of the questionnaires was to commence on 13 June 1996 (the end of term 2). However, this was delayed because on 11 June 1996 the Principal Investigator was requested to suspend the program by the Chairman, Committee on Clinical Investigation (Ethics), Flinders Medical Centre.

The Committee had received a number of complaints (approximately 4) about the program, from parents of students attending public schools participating in the program. The main areas of concern focused on the assent process, the skills of school counsellors, the content of the questionnaire and the information material being provided to parents.

Representations were made to the Committee by members of the program team and it was agreed, among other things, that parent letters should be enhanced to more clearly reflect the aims of the project and that a paragraph explaining the project be translated into different languages and enclosed in the material sent to parents. Subject to these changes, the program was re-approved by the Committee on July 3, 1996 and questionnaire administration took place the week beginning 5 August (week three of term 3).

Questionnaires were completed under the supervision of teachers. Teachers were instructed to inform students that their participation was voluntary and that non-participation would have no consequences whatsoever. Students were asked to record their initials and dates of birth and informed that, if they appeared to be experiencing personal problems, these initials and dates of birth would be given to school counsellors who would then seek to interview them. Students were told that not every one might be able to complete the questionnaire but to do the best that they could. The questionnaire took about one and a half hours for those who experienced the most difficulty.

Due to concerns raised by schools and parents, provision was made for the possibility that some students might experience distress as a result of the questionnaire. If students did not wish to complete the questionnaire for whatever reason, this was left to their discretion. It was recommended that a person (usually the school counsellor) be available to talk with any student showing distress and that a group debriefing occur following completion of the questionnaires. Included with each questionnaire was a typed list of all agencies in South Australia

dealing with young people and their emotional problems, along with their current telephone number.

SAMPLE CHARACTERISTICS AND MATCHING OF QUESTIONNAIRES

Across both waves of the program, similar numbers of students provided useable questionnaires for analysis (T_1 = 1813 Year 8 students; T_2 = 1714 Year 9 students). Data relating to the total Year population in each of the schools participating in the program has not yet been fully collected. Preliminary indications are that our sample sizes constitute approximately 80 per cent of the total Year population. The main cause of non-participation in the program appears to be due to parents withdrawing students, for reasons unknown.

Questionnaires are matched between the two time periods using the students school code, initials of first name, middle name, last name and date of birth. Unmatched questionnaires were individually examined and other information (for example, parents occupation) was used in addition to the above, to try and match T_1 questionnaires to T_2 questionnaires. The sample size and final matching results to date are shown in Figure 2.1.

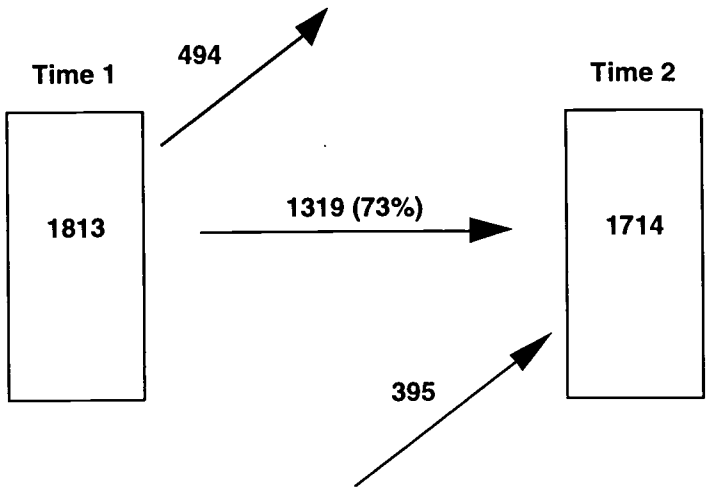
This figure shows that similar numbers of questionnaires were completed in both time periods (1813 and 1714). Seventy-three per cent of T_1 questionnaires (1319 of 1813) were able to be matched to T_2 questionnaires. Also shown is the number of T_1 questionnaires not able to be matched to T_2 questionnaires (494) and the number of T_2 questionnaires not able to be matched to T_1 questionnaires (395).

For a variety of reasons, such as illness, other school commitments at the time of the questionnaire administration, and the transfer of students between schools participating in the study, it was inevitable that not all T_1 questionnaires would be matched to T_2 questionnaires. The attrition of subjects for these reasons would produce missing data, arguably, at random. Therefore, analyses focusing only on those providing responses at both waves would not introduce bias.

On the other hand, bias would be introduced if the data were not missing at random. For example, young males are known to be at increased risk of suicide than young females. Males might also be either less likely to participate in both waves of the questionnaire or, when they did participate, less likely to provide the necessary identifying information to enable matching of questionnaires. In this case, the application of statistical models which assume random sampling attrition would be inappropriate and produce biased estimates.

A logistic regression analysis was performed to examine whether attrition in our study was consistent with random non-response or suggestive of an underlying problem of systematic error. Comparisons were made between the number of questionnaires matched between T_1- T_2 of the study, taking into account a number of key variables. The results of these analyses indicated that the attrition of

FIGURE 2.1: Time 1 and Time 2 Sample Sizes and Matching of Questionnaires



the sample between T_1- T_2 does not appear to be at random. In particular, students identified by us in T_1 as being vulnerable, those who indicated that they had previously engaged in suicidal behaviours, students self-reporting higher levels of delinquency, and students reporting poorer family functioning were significantly less likely to complete matchable questionnaires in T_2.

The mechanisms underlying the differential attrition rate are not fully understood at this point in time. In view of this, the analyses presented in this report must be treated as preliminary and indicative of our work in progress. Strategies for reducing the systematic bias exhibited in the T_2 data are currently being developed for T_3 of the study and statistical modelling techniques appropriate for our data are being explored.

3 STUDENT PROFILE

This chapter provides summary statistics on demographic, social and cultural characteristics as reported by students participating in the program. These characteristics play an important role for young people in defining identity and influencing emotional development.

STUDENT DEMOGRAPHICS

GENDER

The gender distribution of this sample is presented in Table 3.1. Approximately 55 per cent of students in the sample were male, and 45 per cent female.

TABLE 3.1: What is your gender?

	Time 1		Time 2	
	N	(%)	N	(%)
Male	1000	55.2	935	54.8
Female	810	44.8	772	45.2

ETHNICITY

Table 3.2 reports the country of birth of the students, indicating that the majority (around 93 per cent) were born in Australia in T_1 and T_2. Overall, only 123 (T_1) and 126 (T_2) students stated that they were born overseas.

TABLE 3.2: What is your country of birth?

	Time 1		Time 2	
	N	(%)	N	(%)
Australia	1683	93.2	1577	92.6
U.K. or Ireland	47	2.6	47	2.8
Europe*	6	0.3	13	0.8
South East Asia	6	0.3	10	0.6
Other	64	3.6	56	3.3

* Europe groups the categories Italy, Greece and Germany

This finding is consistent with data in Table 3.3, relating to the main language spoken at home. Over 95 per cent of the students spoke English and only 76 students at T_1 and 54 at T_2 indicated that their main language was non-English speaking. These proportions remained similar between T_1 and T_2.

TABLE 3.3: What is the main language spoken in your home?

	Time 1		Time 2	
	N	(%)	N	(%)
English	1727	95.8	1648	96.8
European*	14	0.8	17	1.0
Other	62	3.4	37	2.2

* European groups Italian, Greek and German categories

ABORIGINALITY

Students were asked to indicate whether they were of Aboriginal or Torres Strait Islander origin. Table 3.4 below shows that almost 99 per cent of the students at T_1 and T_2 were not of Aboriginal or Torres Strait Islander origin. The 20 students of Aboriginal or Torres Strait Islander origin at T_1 and 21 at T_2 (approximately 1 per cent) represent a similar proportion to that found in the general community.

TABLE 3.4: Are you of Aboriginal / Torres Strait Islander origin?

	Time 1		Time 2	
	N	(%)	N	(%)
No	1744	98.9	1660	98.8
Yes	20	1.1	21	1.2

PEER RELATIONSHIPS

Humans learn how to behave in their social environment through others. Adolescence is an important period of development and a time of rebellion from parental influence. Therefore, peer relationships are crucial for adolescents to establish necessary social skills and behaviours. If adolescents are unsuccessful in these relationships, they can suffer a multitude of emotional problems as they try to come to terms with their environment.

NUMBER OF CLOSE FRIENDS

The number of close friends an adolescent has may affect (or at times reflect) their emotional stability. A student without close friends may lack the opportunity to bond with another person in a way which assists appropriate social development. The school environment encourages students to form groups and students who are not part of a group may become isolated.

Table 3.5 shows that more than 70 per cent of the students reported having four or more close friends. Students with two or three close friends represented almost one-quarter (24 per cent) of the sample at T_1 and around one-fifth (approximately 21 per cent) at T_2. Less than 4 per cent of students indicated they had only one close friend and only 14 students at T_1 and 20 students at T_2 (around 1 per cent) claimed to have no close friends.

TABLE 3.5: About how many close friends do you have?

	Time 1		Time 2	
	N	(%)	N	(%)
None	14	0.8	20	1.2
One	59	3.3	34	2.0
Two or Three	436	24.2	350	20.5
Four or more	1296	71.8	1304	76.3

PHYSICAL COMMUNICATION WITH FRIENDS

Having friends who use touch to communicate in a pleasant or good way is likely to assist individuals to feel positive about themselves. However, if an individual in a friendship is often touched in an unpleasant or bad way, this may be destructive to their self-concept (Pearce, Martin & Wood, 1995).

The use of positive touch by friends in this sample is described in Table 3.6. Over 40 per cent of students in T_1 and a similar proportion in T_2 (35 per cent) reported that their friends used touch in a pleasant or good way at least once daily. Almost 10 per cent of students reported friends touching them in a pleasant or good way at least once monthly, up to 15 per cent at least once yearly and less than 20 per cent at least once weekly. Over one-fifth of students (22 per cent) indicated that their friends never use touch to communicate with them in a pleasant or good way.

TABLE 3.6: How often do your friends use touch to communicate with you in *a pleasant or good way?*

	Time 1		Time 2	
	N	(%)	N	(%)
Never	387	22.0	361	21.7
At least once yearly	223	12.6	249	15.0
At least once monthly	161	9.1	165	9.9
At least once weekly	279	15.8	302	18.2
At least once daily	713	40.5	585	35.2

Table 3.7 reports the use of negative touch by friends for these students. Around 60 per cent of students reported that their friends never use touch to communicate with them in an unpleasant or bad way. More than 15 per cent of students were touched in a negative way by their friends at least once yearly and between 5 and 10 per cent at least once weekly or once monthly. Further, as many as 218 students (12 per cent) in T_1 and 152 (9 per cent) in T_2 were touched by their friends in an unpleasant or bad way at least once daily.

TABLE 3.7: How often do your friends use touch to communicate with you in *an unpleasant or bad way?*

	Time 1		Time 2	
	N	(%)	N	(%)
Never	1027	58.1	996	59.6
At least once yearly	267	15.1	275	16.5
At least once monthly	143	8.1	119	7.1
At least once weekly	114	6.4	129	7.7
At least once daily	218	12.3	152	9.1

MUSIC

Considerable interest has been shown in the relationship between music preferences and suicidal behaviours in adolescents. The issue of whether the relationship is causal in either direction is hotly debated in the academic literature and popular press. Recent work suggests that adolescents with preexisting personal and family psychopathology may seek out particular music because 'either the style or the themes and lyrics resonate with their own feelings of frustration, rage, and despair' (Martin, Clarke & Pearce, 1993, p 534).

MUSIC PREFERENCE

Students were asked to select their favourite kind of music from fourteen choices and an 'other' category. The inclusion of this music question results from some evidence to date which suggests adolescents who listen to rock/heavy metal music also report suicidal behaviours (Martin, Clark & Pearce, 1993).

The most popular type of music chosen by students was 'Rock', at around one-quarter of the students. 'Pop' followed 'Rock', with approximately 15 per cent of students indicating it was their favourite. At T_1, 'Techno' (14 per cent) and 'Heavy Metal' (12 per cent) represented a reasonable proportion of students choices. This proportion decreased at T_2 for both 'Techno' (around 7 per cent) and 'Heavy Metal' (about 8 per cent). For other types of music, students' responses were varied. Thirty seven per cent of students at T_1 and 44 per cent at T_2 reported multiple kinds of music as their favourite or various other types of music.

TABLE 3.8: My favourite kind of music is (please mark one only):

	Time 1		Time 2	
	N	(%)	N	(%)
Pop	246	14.4	248	15.4
Heavy metal	202	11.8	120	7.5
Rock	388	22.8	422	26.2
Techno	243	14.3	105	6.5
Other/multiple	626	36.7	714	44.4

MUSIC AND EMOTIONS

Music is a source of entertainment and enjoyment for most people, and Table 3.9 shows the majority of students at T_1 (83 per cent) and T_2 (around 86 per cent) indicated that they generally felt better after listening to their favourite type of music.

Nevertheless, some adolescents feel worse or are unaffected after listening to their favourite type of music. This may be of importance given that Martin et al. (1993) have suggested that those feeling worse after listening to their favourite music appear to have the most dysfunctional lives and be the most distressed on a number of parameters. In the present sample (Table 3.9), almost 16 per cent of students at T_1 and around 13 per cent at T_2 reported no change in the way they felt, and 20 students at T_1 (1 per cent) and 27 at T_2 (around 2 per cent) claimed to feel worse after listening to their favourite music.

TABLE 3.9: How do you generally feel after you have listened to your favourite type of music?

	Time 1		Time 2	
	N	(%)	N	(%)
Better	1475	83.3	1430	85.5
No change	277	15.6	216	12.9
Worse	20	1.1	27	1.6

4 FAMILIES AND PARENTING

In our society the family is a central social structure integrally related to the emotional development of young people. Family life in Australia is changing and evolving over time. Survey data collected from large scale population studies indicate that the traditional two parent-child family unit is becoming relatively less common with increases in defacto relationships, divorces and re-marriages. In addition, the pressures acting on families in the 1990's are felt by many to be considerable. This chapter presents summary statistics drawn from the T_1 and T_2 samples on aspects of family life thought to be related to the emotional development of young people.

FAMILY CLOSENESS

Students were asked to rate the closeness of their family using a four point scale ranging from 'A very close family' to 'Nothing more than a group of people living under the same roof'.

More than half of the students reported that they had a close family, increasing from around 55 per cent in T_1 to approximately 62 per cent at T_2. This shift was offset by the decrease in students who claimed a very close family, from 37 per cent at T_1 to 28 per cent at T_2. Almost 8 per cent of students at T_1 and 10 per cent at T_2 indicated that they were in a family that did not relate very well. Fifteen students at T_1 and 17 at T_2 (about 1%) described their family as nothing more than a group of people living under the same roof.

TABLE 4.1: How close is your family?

	Time 1		Time 2	
	N	(%)	N	(%)
Very close	659	36.8	469	27.6
Close	984	54.9	1049	61.8
Family does not relate very well	134	7.5	162	9.5
Just a group of people living under the same roof	15	0.8	17	1.0

PHYSICAL COMMUNICATION IN THE FAMILY

There is a considerable body of evidence to suggest that positive physical contact is important for the healthy development of the individual. Conversely, negative physical contact has been found to predispose an individual to psychiatric disorders including depression (Cochrane, 1990).

In earlier work carried out by members of the research team, the frequency of positive and negative physical contact experiences were found to have a significant impact on the psychological adjustment of high school students (Pearce, Martin & Wood, 1995). In particular, students reporting suicidal ideation perceived themselves as having experienced more negative touch and less positive touch than those who did not.

Fortunately, the number of students reporting low levels of family positive touch or high levels of negative touch is small. Sixty per cent of students reported that family members use touch with them in a pleasant or good way at least once daily. Up to 20 per cent of students reported that family members touched them in a positive way at least once weekly, less than 10 per cent at least once monthly and around 5 per cent at least once yearly. Sixty-one students (4 per cent) in T_1 and 88 students (5 per cent) in T_2 indicated that members of their family never use touch with them in a pleasant or good way.

Table 4.2: How often do family members use touch to communicate with you in a *pleasant or good way?*

	Time 1		Time 2	
	N	(%)	N	(%)
Never	61	3.5	88	5.4
At least once yearly	83	4.8	91	5.5
At least once monthly	111	6.4	142	8.6
At least once weekly	273	15.7	318	19.3
At least once daily	1213	69.6	1005	61.2

Approximately 60 per cent of students in T_1 and approximately 66 per cent in T_2 reported that members of their family never touch them in an unpleasant or bad way (Table 4.3). Over 20 per cent of the students' family members used touch in a negative way at least once yearly, less than 10 per cent at least once monthly and less than 5 per cent at least once weekly. One-hundred and eight students (6 per cent) in T_1 and 62 students (4 per cent) in T_2 were touched by their family members in an unpleasant or bad way at least once daily.

TABLE 4.3: How often do family members use touch to communicate with you in *an unpleasant or bad way?*

	Time 1		Time 2	
	N	(%)	N	(%)
Never	1051	59.7	1110	66.1
At least once yearly	390	22.1	355	21.1
At least once monthly	131	7.4	101	6.0
At least once weekly	82	4.7	52	3.1
At least once daily	108	6.1	62	3.6

FAMILY FUNCTIONING

When families work well they can provide a buffer from life stresses and contribute to each member's physical and emotional well-being. On the other hand, a disturbed family environment is strongly associated with emotional / behavioural problems in young people and has been reported as a characteristic of suicidal youth (Stephens, 1987; Martin et al., 1995; Martin, 1996a).

Using the *McMaster Family Assessment Device - General Functioning subscale (FAD-GF)* (see Glossary), students were asked to rate their families on 12 items. Recently published work (Martin, 1996a) suggests that high scores on the FAD-GF are associated with depression. Scores on the FAD-GF range from 1.0 to 4.0 with higher scores representing greater family pathology. A score above 2.17 is used as the 'cut-point' for categorical analyses to distinguish between 'healthy' and 'pathological' families.

TABLE 4.4: Family Assessment Device

	T_1	T_2
FAD-GF score Mean (SD)	1.85 (0.48)	1.88 (0.49)
'Pathological' families (%)	15.6	16.7

Overall scores on the FAD-GF, in the range of 1.8 - 1.9 are comparable to scores obtained in overseas population-based studies (Byles et al., 1988). However, the percentage of 'pathological' families (T_1 = 16 per cent; T_1 = 17 per cent) is slightly higher than the figure of 12 per cent estimated from a community survey of children aged between 4 and 16 years living in Western Australia (Silburn et al., 1996). Considerable sampling and other methodological differences between the surveys means that little can be inferred from comparison results other than to suggest that our figures are comparable to those obtained in previous research.

The deterioration of scores in our sample between T_1 and T_2 does not appear to be caused by sampling attrition bias. Therefore, this deterioration is either related to a general worsening of family functioning, or an aging effect, with older adolescents perceiving their families more negatively than younger people.

PARENTING STYLE

The majority of students (T_1 = 71%; T_2 = 68%) indicated that their natural or biological parents were married and living together. Consistent with this, most students (T_1 = 70%; T_2 = 68%) reported that they lived with two natural or biological parents.

The connection between the quality of parenting and suicidality is most obvious in very disturbed families. These families may experience high levels of parental discord, frequent changes in caretakers or physical/sexual abuse (De Wilde et al., 1992). Typically, family discord finds expression in the relationship between parents and adolescents.

The quality of the relationship between parents and adolescents can be measured using the *Influential Relationships Questionnaire (IRQ)* (see Glossary). This consists of Criticism, Care and Protection scales. Previous studies have shown that young people with suicidal behaviours rate their parents as less caring, more overprotective and more critical (Goldney, 1985; Martin & Waite, 1994; Allison et al., 1995).

Table 4.5 shows mean scores in T_1 and T_2 for maternal and paternal subscales of the IRQ.

TABLE 4.5: Influential Relationships Questionnaire

		T_1	T_2
		Mean (SD)	Mean (SD)
Maternal	Care	27.0 (5.89)	26.4 (5.90)
	Overprotection	12.8 (6.18)	12.8 (6.34)
	Criticism	10.1 (5.34)	10.2 (5.36)
Paternal	Care	24.8 (6.76)	24.1 (6.58)
	Overprotection	11.9 (6.32)	12.1 (6.44)
	Criticism	10.6 (5.76)	11.0 (5.72)

5 MENTAL HEALTH

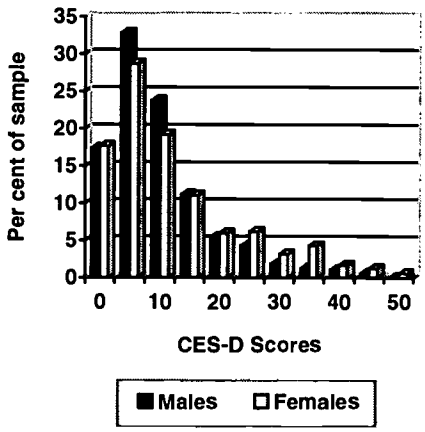
Mental health difficulties have been shown to be associated with youth suicide. One of the strongest correlates of suicidal behaviour is depression, with very high percentages of those who complete suicide being found to have suffered from major depressive illness.

This chapter presents summary statistics from a range of psychological scales used in the study to measure the mental health of the students participating in the program. The results from each of the scales are presented individually to allow comparisons with the results from other studies, but further work is required to capture the complexities and co-occurrence of these emotional states.

DEPRESSION

The majority of adolescents who attempt or actually complete suicide also suffer mental health problems, particularly *depression* (see Glossary). Depression is considered to be the single most significant risk factor for suicide (Brent et al., 1993), and for people already having made an attempt it is one of the best predictors of a further attempt (Gunnell & Frankel, 1994). However, it is important to note that depression is related to other psychological characteristics (e.g. self esteem) that also correlate with adolescent suicidal behaviour. In addition, the majority of depressed adolescents do not attempt or complete suicide and not all suicide attempters are depressed.

Graph 5.1: Distribution of depression scores in T_1 by gender



Despite the complexities surrounding the exact relationship between depression and suicidal behaviours many commentators believe that the early identification and treatment of depressive disorders in adolescence can play a vital role in a suicide prevention program (Blumenthal, 1990). In our program to measure depressive symptomatology we used the *Centre for Epidemiologic Studies - Depression Scale (CES-D)* (see Glossary). Scores on the CES-D range from 0 to 60 with higher scores indicating higher levels of depression.

Graph 5.2: Distribution of depression scores for T_1 and T_2

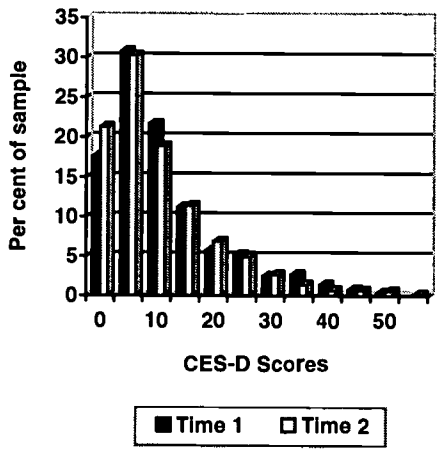


Table 5.1 shows that the overall mean score for depression in this sample was around 13 in T_1 and 12 in T_2. Males in the sample had lower average scores in both time periods (T_1 = 12; T_2 = 11) than females (T_1 = 14; T_2 = 13). Previous researchers using the CES-D as a screen for depression in adolescents have determined optimal cut points of 12 for males and 22 for females (Garrison et al., 1991b). Using these cut points, the proportion of our sample recommended for further follow up is approximately one-fifth for females (T_1 = 21 per cent, T_2 = 19 per cent) and just over one-third for males (T_1 = 38 per cent, T_2 = 35 per cent).

Using the cut points outlined above and extrapolating from the results of Garrison's community sample, we can estimate that approximately 56 (6.1%) T_1 and 48 (5.5%) T_2 males and 51 (6.6%) T_1 and 44 (6.0%) T_2 females would meet DSM-III criteria for major depression.

ANXIETY

Follow-up studies of adults with *anxiety* disorders (see Glossary) have shown that suicide accounts for around 20 per cent of deaths, a rate comparable to that of major depression (Noyes, 1991). However, studies of suicide and anxiety in children and adolescents are limited. One study found diagnosed anxiety disorders in up to 35 per cent of children aged 6 to 18 who reported thoughts of suicide, and up to 64 per cent of children who had attempted suicide (Brent et al., 1986). Anxiety often co-occurs with depression and drug abuse, but may also independently lead to suicidal thoughts and behaviours due to its severely detrimental effects on adolescents' abilities to form social relationships (Martin, 1995).

Subjects in this study completed the seven-item anxiety subscale of the *Hospital Anxiety and Depression Scale (HADS)* (see Glossary), a widely used questionnaire recommended for indicating the probability of the presence of anxiety or depression (Mumford, 1991). Higher scores represent increased levels of anxiety.

The overall mean score for anxiety in this sample, shown in Table 5.1, was around 5 in T_1 and 4.5 in T_2. As with depression, males in the sample had lower means (T_1 = 4.3 and T_2 = 3.9) than females (T_1 = 5.7 and T_2 = 5.2).

HOPELESSNESS

Hopelessness (see Glossary) has been shown to be associated with plans for suicide and completed suicide among adults in both clinical samples and samples of the general community (Allison et al., 1995). For adolescents, the evidence is less clear cut. Some studies (e.g. De Wilde, 1993) have failed to find a direct relationship not accounted for by depression, while others have suggested that the relationship exists only for girls and not boys (e.g. Cole, 1989).

The *Beck Hopelessness Scale (BHS)* (see Glossary) was used to indicate the extent to which the students in this study hold negative attitudes about the present, and pessimistic beliefs about the future. The scale has been widely used with adolescents (Allison et al., 1995), and consists of 20 statements such as 'the future seems dark to me', to which the subject responds true or false (Freeman & Munro, 1990). Higher scores indicate increasing levels of hopelessness.

For the whole sample, mean scores for hopelessness (see Table 5.1) were around 3.7 in both T_1 and T_2. Males on average had lower scores (at around 3.6) than females (around 3.8).

TABLE 5.1: Mental Health of the Students

		T_1		T_2	
		Mean	**SD**	**Mean**	**SD**
Depression	Overall	12.6	9.98	12.0	9.86
	Males	11.6	8.73	10.7	8.73
	Females	13.8	11.20	13.4	10.90
Anxiety	Overall	4.96	4.88	4.45	4.47
	Males	4.30	4.21	3.86	4.05
	Females	5.72	5.46	5.15	4.84
Hopelessness	Overall	3.67	3.65	3.72	3.95
	Males	3.59	3.48	3.60	3.85
	Females	3.78	3.84	3.84	4.03
Self-esteem	Overall	39.6	7.21	39.9	7.31
	Males	40.3	7.01	40.9	7.06
	Females	38.7	7.36	38.8	7.36
Locus of control	Overall	14.3	5.20	13.3	5.32
	Males	14.3	5.15	13.1	5.45
	Females	14.3	5.27	13.6	5.17

SELF-ESTEEM

Many studies have demonstrated a relationship between *self-esteem* (see Glossary) and suicide. One such study indicated that adolescents who attempt suicide have significantly lower self-esteem than normal adolescents or adolescents suffering from major depression (De Wilde et al., 1993). Overholser et al. (1995) reported that self-esteem provided further understanding of suicidal ideation above that which could be demonstrated by depression or hopelessness.

The *Rosenberg Self-Esteem Scale (RSES)* (Rosenberg, 1965) is a global measure of self-acceptance and self-worth, designed for use specifically with adolescents (Freeman and Munro, 1990). It consists of ten items measuring positive and negative attitudes towards oneself. The subject rates each statement in the categories 'strongly agree', 'agree', 'disagree' and 'strongly disagree' (Hale et al., 1992). Scores range between 10 and 50, with higher scores indicating higher levels of self-esteem.

Mean RSES scores for students in this study were almost 40 over both time periods. Mean scores for males were roughly equivalent to females (40 and 39 respectively).

LOCUS OF CONTROL

'Locus of control' is a term used to describe the extent to which an individual perceives outcomes in life to be within or outside their control (Rotter, 1966). Individuals with an external locus of control perceive events as due to other factors outside of their own control, for instance, chance or luck. In contrast, those with an internal locus of control feel that they can control their environment and that what happens to them is a result of their own decisions and actions.

Adolescents engaging in suicidal behaviour have been found to exhibit a more external locus of control (Pearce and Martin, 1993). In a longitudinal study of high school students moving into adulthood, Goldney et al. (1991) demonstrated an association between locus of control scores and suicidal ideation over time. This was based on Goldney's (1982) earlier work in which young women who had attempted suicide were found to score more externally than a control group. Of particular note, he found that within this group, high-lethality attempters scored more internally than low-lethality attempters.

The locus of control construct was measured using the *Adult Nowicki-Strickland Internal-External Locus of Control Scale (ANSIE)* (see Glossary) (Nowicki & Strickland, 1973). It consists of 40 items, each requiring a yes or no response. Higher scores signify an increasingly external locus of control orientation.

Table 5.1 shows that the mean locus of control scores declined slightly between T_1 (14.3) and T2 (13.3) indicating reduced externality. Overall scores are consistent with a previous study conducted in Adelaide high schools some 16 years ago of year 10 students (Tiggemann and Winefield, 1984). This study found mean scores for boys of 13.3 and for girls of 14.5. Findings that greater externality was exhibited at T_1 than at T_2 and that gender differences were not significant is also replicated in the present study.

6 DELINQUENT BEHAVIOUR

Adolescents are perceived as being notorious for their delinquent behaviour. Impulsiveness or risk-taking behaviours are forms of delinquency in youths with which substance abuse and suicide are commonly associated. Delinquency, risk-taking and drugs are not only risk factors for suicide, but a method and mask for such behaviours. Accidental deaths, not always proven to be suicide, are often the result of these behaviours through motor vehicle crashes and overdoses. The extent of these delinquent and risk-taking behaviours and the prevalence of drug use in this sample are described in this chapter.

DELINQUENCY

The link between adolescent suicidality and *delinquency* (see Glossary) or antisocial behaviour has been well established. While antisocial behaviour itself has been repeatedly shown to be related to suicidal ideation, attempts and completed suicide, the risk of suicide is enhanced by the frequent co-occurrence of delinquency, mental disorders (particularly major depression) and substance abuse, which are also related to suicidality (Marttunen et al., 1994).

Delinquent behaviours (usually denoting some acts against the law) can occur in repetitive behaviour patterns that persist for at least six months. Disruptive Behaviour Disorder includes Conduct Disorder and Oppositional Defiant Disorder. A study examining the co-occurrence of suicide attempts with psychiatric disorders in high school students found that a higher incidence of disruptive behaviour disorders occurred in suicide attempters than in adolescents who did not attempt suicide (Andrews & Lewinsohn, 1992).

A further study involving psychological autopsies of suicide completers found that 23 of the 53 victims were reported to have engaged in recurrent antisocial behaviour. Of the 23, 9 were diagnosed with Conduct or Antisocial Personality Disorders, while 14 had antisocial behaviour that was of a relatively short duration (less than six months) and was not sufficiently severe for classification as a disorder. This finding, while supporting the link between suicidality and antisocial behaviour, also indicates that adolescents whose degree of antisocial behaviour is not severe enough for clinical diagnosis must also be considered at an increased risk of suicide (Marttunen et al., 1994).

The delinquency scale used in the YAC is adapted from the *Self-Report Delinquency Scale (SRDS)* (see Glossary). Students respond 'yes' or 'no' to the 24 statements which make up the items of the scale, such as 'I have cut classes or skipped school under the age of fifteen' or 'I have taken money from home without returning it'. Every 'yes' response receives a score of 1; higher scores indicate increasing levels of delinquency. The results for this sample are detailed in Table 6.1 As expected, males score more highly than females (T_1 = 3.7, T_2 = 5.4 as opposed to T_1 = 2.5, T_2 = 3.7), and scores are higher for both at T_2.

Table 6.1: Mean delinquency scale scores

	T_1	T_2
	Mean (SD)	Mean (SD)
Overall	3.18 (3.42)	4.62 (4.61)
Males	3.74 (3.78)	5.42 (5.01)
Females	2.50 (2.79)	3.65 (3.87)

RISK-TAKING

Excessive risk-taking has been shown to related to depression and suicidal intent (Clark et al., 1990). It has also been associated with suicide attempts and antisocial personality disorder (Steiner, 1972). A study of school students on the risk-taking measure used in this study found that those without any suicidal thoughts and behaviours had significantly lower risk-taking scores than adolescents with suicidal ideation, plans, deliberate self harm, and suicide attempts (Martin et al., unpublished; Martin et al., 1993). Further, those who claimed an attempt scored highest on the BARTS.

Theories to explain the motives for such behaviour have suggested that 'risky' behaviour is an individual's disguised denial of an unconscious suicidal intent (Clark et al., 1990). It is clear that some accidental deaths may in fact be disguised suicide. Further, risk takers are inclined to experiment with intoxicating substances which may increase their potential for having accidents which in turn may lead to death.

The 14-item *Brief Adolescent Risk-Taking Scale (BARTS)* (see Glossary) was used to measure the students' levels of risk-taking behaviour. In this scale students are asked to rate the frequency with which they participate in certain activities, using the categories 'never', 'sometimes' or 'often'. Scores range from 0 to 28, with higher scores indicating increased risk-taking behaviour.

Table 6.2: Mean scores from BARTS

	T_1	T_2
	Mean (SD)	Mean (SD)
Overall	10.6 (3.79)	11.6 (4.12)
Males	11.3 (3.70)	12.3 (4.17)
Females	9.8 (3.75)	10.8 (3.91)

The overall mean scores on the BARTS (see Table 6.2) increased by 1 between T_1 (around 11) and T_2 (almost 12). This rise reflects an expected increase in risk-taking propensity with age, and is confirmed with both males (T_1 = 11, T_2 = 12) and females (T_1 = 10, T_2 = 11). This data verifies earlier work on the BARTS with school students who are of the same age as our sample for T_3. Means for this group were higher by a score of 1 and females also had significantly lower mean scores, at approximately 13 for males and 12 for females.

DRUG USE

Since the 1960's the rate of drug use, particularly the use of illicit drugs, has increased dramatically, as has the suicide rates of adolescents and young adults (Kandal et al., 1991). Some evidence suggests that the concurrent increases in drug use and suicide rates in adolescents are linked (Crumley, 1990).

Drug use, alongside eating disorders and disruptive behaviour, are strategies used by some adolescents to attempt to cope with the many stresses associated with this period of life (Kandal et al., 1991). Invariably these strategies are ineffective as they only offer a temporary solution, and in fact often add to the individual's difficulties. Suicide may then become an 'alternative coping strategy' adopted when these other methods fail.

Other studies have shown that substance abuse is an important risk factor for adolescent suicide attempts (Andrews & Lewinsohn, 1992). It is also associated with greater frequency and medical lethality of attempts (Crumley, 1990). The rate of substance abuse in adolescents who had completed suicide was found to be 8.5 times that of matched control subjects (Brent et al., 1993) and 70 per cent of suicide victims have been found to be have had alcohol or substance abuse problems (Blumenthal, 1990).

Substance abuse is also related to social isolation, antisocial behaviour, violent crimes, delinquency and risk-taking behaviour (Kumpfer & Hopkins, 1993). It frequently occurs in combination with depression, conduct and personality disorders, and is believed to intensify the course of these disorders. Similarly, chronic alcohol abuse results in depression, and is likely to damage interpersonal relationships thereby increasing social isolation (Murphy, 1986).

One study found that individuals suffering an affective disorder in combination with substance abuse had 17 times the probability of completing suicide than did controls, while the probability was 3.3 times in individuals with substance abuse alone (Brent et al., 1993). Drugs and alcohol also potentiate methods of suicide: in one study, drug overdose was the method used in 93 per cent of attempted suicides (Slap et al., 1989). Alcohol is also involved in single motor vehicle accidents believed to be suicides (Blumenthal, 1990).

TABLE 6.3: Drug use

	Frequency of Drug use (%)				
	Never	< 1x per month	1-3x per month	1x per week	> 1x per week
Alcohol					
T_1	40.7	39.7	12.2	5.4	2.0
T_2	25.8	40.8	21.7	6.9	4.8
Tobacco					
T_1	77.5	11.4	4.5	2.1	4.5
T_2	65.6	15.6	4.8	2.9	11.2
Marijuana					
T_1	83.5	8.8	3.5	1.8	2.3
T_2	67.7	14.2	6.7	3.8	7.6

The frequency of *drug use* (see Glossary) of the most commonly taken types of drugs for this sample are detailed in Table 6.3. The frequency of each of these drugs notably increases between T_1 and T_2. The greatest increase was 10 per cent in alcohol use, at a frequency of one to three times a month (T_1 = 12 per cent; T_2 = 22 per cent). Other large increases were weekly use of tobacco (T_1 = 5 per cent; T_2 = 11 per cent) and monthly use of marijuana (T_1 = 9 per cent; T_2 = 14 per cent). Sniffing of glue / petrol / solvents remained similar between T_1 (15 per cent) and T_2 (13 per cent).

7 SUICIDALITY

The overall goal of the Early Detection of Emotional Disorders program is to reduce the numbers of young people engaging in suicidal behaviours. Many mental health professionals would agree that searching for predictive tools to determine which particular young people will suicide is almost impossible. However, we are aware that there are close relationships between aspects of the spectrum of suicide. Those who have suicidal thoughts are more likely to have made plans or threatened suicide, those who make plans are more likely to have attempted, and those who attempt are likely to attempt suicide again. Further, the risk of death from suicide is increased almost exponentially with each attempt. Aiming to predict these behaviours as a group increases our chances of accuracy in the prediction of vulnerable adolescents. This chapter explores the extent of these behaviours in our sample.

PREVALENCE OF SUICIDAL BEHAVIOURS

The results obtained from any epidemiological study of suicidal behaviours depends very much on the specific questions asked and how terms are defined. In the present study we used the Adolescent Suicide Questionnaire (ASQ) to determine the extent of suicidal behaviours in our sample of students. The ASQ, among other things, asks students to report whether they have:

'thought about killing yourself' (Ideation)

'made plans to kill yourself without carrying them out' (Plans)

'made threats to others that you will kill yourself' (Threats)

'deliberately tried to hurt yourself' (Deliberate Self Harm - DSH)

'tried to kill yourself' (Attempts)

When answering these questions, students indicated how long ago it was that they engaged in each of these behaviours. The full data is not displayed at this point, but we are able to report on suicidal behaviours within the last month, last 3 months, last 6 months, last year, and more than a year ago. At this time responses have been categorised as 'never' and 'ever'.

TABLE 7.1: Adolescent Suicide Questionnaire

%	Ideation	Plans	Threats	DSH	Attempts
T_1 (N=1813)	23.2	11.9	9.8	17.7	6.4
T_2 (N=1714)	26.4	13.5	10.4	18.2	6.0

In addition, the ASQ allows us to consider the seriousness or frequency of thoughts or behaviours. This data is still to be analysed, and is not reported here.

Table 7.1 shows the number and percentage of students claiming they had ever engaged in each of the suicidal behaviours. A quarter of students reported suicidal ideation, around 10 per cent reported having made plans to take their own life and having made threats, 18 per cent that they had had deliberately tried to hurt themselves and 6 per cent reported having made an attempt to kill themselves.

Across the two time periods the increases experienced at the 'lower' end of suicidal behaviours (e.g. ideation and plans) appears consistent with previous research indicating that suicidal behaviours gradually increase in frequency with age in young people. We might therefore expect further increases at T_3 both in terms of 'new recruits' to the lower end of the spectrum as well as progression for some students to more serious types of suicidal behaviours.

STUDENTS' SELF-REPORTED PREDICTION FOR SUICIDAL BEHAVIOURS

The ASQ asks students to state how likely it is that they will engage in suicidal behaviours during the next 6 months. Because the ED[2] program tracks students longitudinally the accuracy of these predictions and hence the utility of these questions in future screening exercises can be assessed.

TABLE 7.2: Likelihood of engaging in suicidal behaviours over the next 6 months

	missing	highly unlikely	unlikely	neither likely nor unlikely	likely	highly likely
Ideation						
T_1 N (%)	439	921 (67.0)	215 (15.6)	105 (7.6)	75 (5.5)	58 (4.2)
T_2 N (%)	122	1156 (72.6)	220 (13.8)	120 (7.5)	56 (3.5)	40 (2.5)
Plans						
T_1 N (%)	670	845 (73.9)	141 (12.3)	76 (6.6)	46 (4.0)	35 (3.1)
T_2 N (%)	136	1224 (77.6)	175 (11.1)	102 (6.5)	37 (2.3)	40 (2.5)
Threats						
T_1 N (%)	595	938 (77.0)	140 (11.5)	68 (5.6)	36 (3.0)	36 (3.0)
T_2 N (%)	129	1251 (78.9)	166 (10.5)	102 (6.4)	22 (1.4)	44 (2.8)
DSH						
T_1 N (%)	505	923 (70.6)	191 (14.6)	86 (6.6)	49 (3.7)	59 (4.5)
T_2 N (%)	118	1153 (72.2)	227 (14.2)	119 (7.5)	39 (2.4)	58 (3.6)
Attempts						
T_1 N (%)	684	889 (78.7)	115 (10.2)	59 (5.2)	20 (1.8)	46 (4.1)
T_2 N (%)	138	1274 (80.8)	145 (9.2)	100 (6.3)	16 (1.0)	41 (2.6)

Table 7.2 shows that the majority of students felt that they were very unlikely to engage in any of the suicidal behaviours in the 6 months from the date they answered the questionnaire. Readers' attention should be drawn to the very high level of missing data at T_1. This occurred due to questionnaire formatting problems which caused many students who had not engaged in any given suicidal behaviour to believe that they did not have to answer the associated 'likelihood' question. The formatting problem was rectified for T_2 and provides more representative and complete data.

Preliminary evidence presented to the Second National Child and Adolescent Mental Health Conference (Melbourne) in November 1996 (Allison et al., unpublished), suggests that high 'likelihood' may be an accurate predictor of future behaviour given the strong association with depression, hopelessness and other risk factors.

SUICIDALITY BETWEEN T_1 AND T_2

Figure 7.1 maps students responses to the question in the ASQ asking whether they had ever made an attempt to kill themselves between T_1 and T_2. Overall 63 students indicated in T_2 that they had made an attempt on their life in the previous 12 months. Of these 63 students 29 had indicated at T_1 that they had never previously made an attempt, 13 indicated that they had made a previous attempt and for 21 students their T_1 questionnaire was not able to be matched to their T_2 questionnaire.

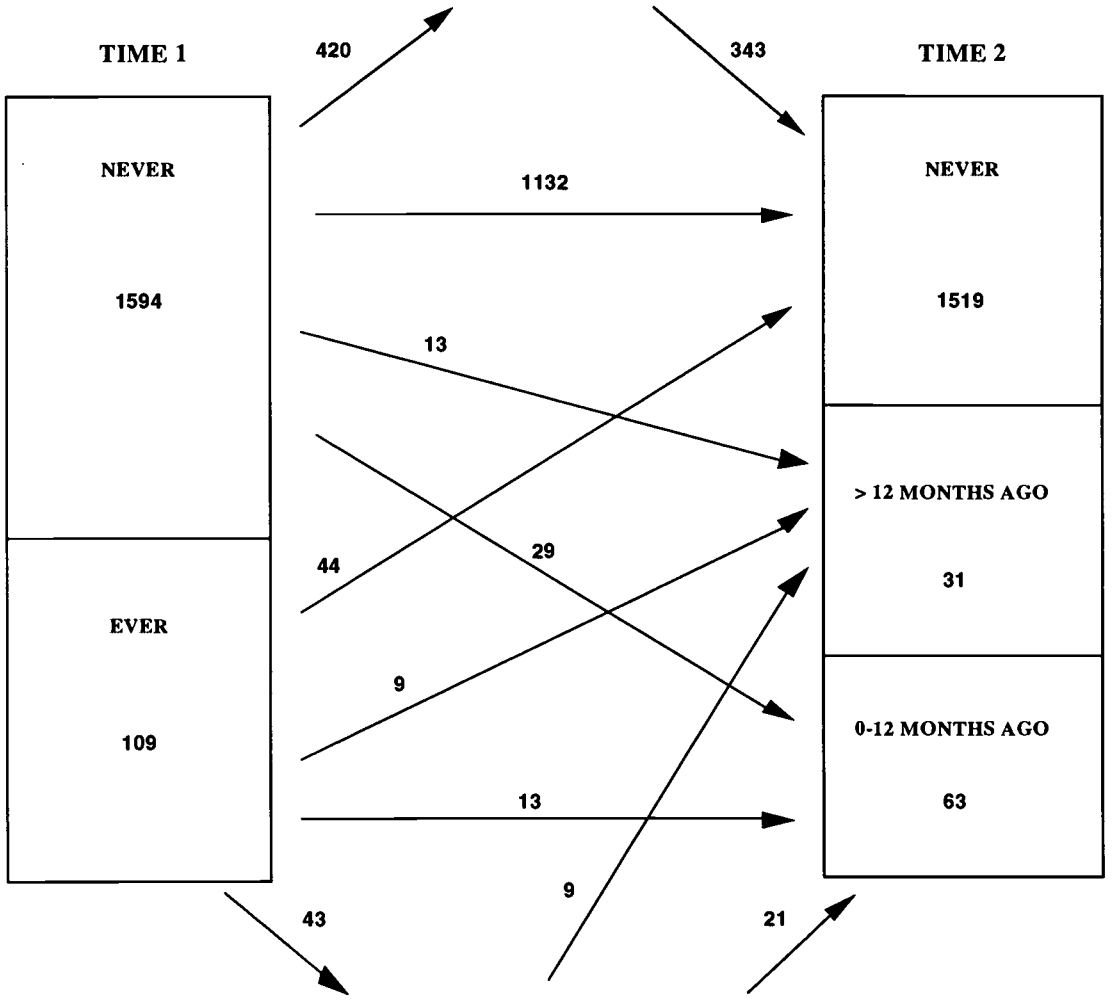
A close examination of Figure 7.1 shows that it is important to bear in mind that the program at this point in time relies exclusively on student self report and that as a result of under and over reporting, inconsistencies are possible. For example, of concern are the 44 of 109 students who indicated at T_1 that they had previously made an attempt on their life only to report at T_2 that they had never previously made an attempt. Also posing significant difficulties

are the 43 students who indicated at T_1 that they had previously made an attempt who did not provide matchable questionnaires at T_2. These two sources of error between them account for 80% of our 'prior attempters', leaving only 20% of this group with usable data between the two time periods.

The complexities appear to call the whole exercise of prediction of suicidal behaviours into question. It may be that these inconsistencies represent the real situation. However, two aspects to the study are worth consideration. First, it appears that the process of intervention, particularly the 'clarification interview' by the school counsellors may be implicated in the apparent loss of dysfunctional and vulnerable young people from T_1 to T_2. Anecdotal feedback suggests the young people concerned may not have appreciated this process and decided to avoid detection at T_2.

Second, the delays in the survey date for T_2 appear to have led to widespread dissatisfaction and resentment among young people, reports suggesting that this was particularly so amongst young people with mental health problems. This too appears to have contributed to the apparent loss from the 'vulnerable' group. Steps have been taken to improve compliance at T_3. However, as data is presented, some caution must be used in any interpretations.

Figure 7.1: Suicide attempts between T1 and T2



8 VULNERABLE STUDENTS

Identifying vulnerable students and providing assistance to them has proved to be one of the most exciting but difficult aspects of the program. From a research perspective, cut off criteria have needed to be developed and complex methodological issues relating to the predictive accuracy of our measures addressed. At the same time, basic logistical issues such as who - how - what - where for intervention have needed to be worked through with people who have different roles and interests in the program, such as parents, students, school counsellors, education authorities, ethics bodies and mental health practitioners. While difficulties and complexities are readily acknowledged, the program has resulted in assistance being provided to students in need of help who would not have otherwise received it.

The intervention phase of the program uses information from the YAC as a screening instrument for detecting students 'at risk' of developing emotional disorders or engaging in suicidal behaviours. The initials and dates of birth of students identified as 'at risk' are then forwarded to school counsellors, who contact parents and conduct a clarification interview with the student to determine if the student would benefit from some assistance or intervention. In this manner, the program combines the efficiency of mass screening procedures (i.e. the YAC) with the increased accuracy of individualised assessment by school counsellors (Lorion et al., 1984). The program therefore involves two 'gates' or filters to help ensure that the majority of students who receive intervention are in fact those most 'at risk' for emotional difficulties.

CRITERIA FOR IDENTIFICATION OF VULNERABLE STUDENTS

Students were identified as being vulnerable or 'at risk' of developing emotional disorders or engaging in suicidal behaviours on the basis of their responses on the self-report questionnaire (the YAC). The criteria used for identification has evolved during the two years of the program and may very well be further refined for the third wave of the program. The different methods used in the two periods are briefly outlined below.

In T_1, a list of some 300 students was produced who scored five or more on the ASQ (suicidal behaviours 'ever' only) or scored at or above two standard deviations above the mean on the CES-D, delinquency, drug taking, FAD or the IRQ. Some further composite indexes were created combining the scales and taking students scoring at either greater than or equal to two standard deviations above the mean, or greater than the 90th percentile. The list of students, along with their raw scores from the questionnaires, was then independently examined by the Principal Investigator and the Senior Psychiatrist on the program team together with research staff. From this list a group of students was identified as having a profile which suggested they were 'at risk' of experiencing serious emotional difficulties.

In T_2 students scores on the CES-D, the Hospital Anxiety and Depression Scale, the Beck Hopelessness Scale, the IRQ and the delinquency scale were converted to Z scores for males and females separately. The Z scores from the scales were then added up to produce a 'Risk Score'. Because of the importance of depression scores they were given a weighted score of two (i.e. multiplied by two). When adding up overall student scores, positive scores were not counted - that is, we only added up the 'bad' or negative scores. This is because it is not yet clear that a 'good' score on one scale can counteract a 'bad' score on another. A list of students was then produced, in order of their Risk Score. The research team following discussions with the Principal Investigator and the Senior Psychiatrist determined a cut off point and all students with scores above the cut off point were considered to be 'at risk'.

A set of further criteria based on different information was then applied to students below the cut off score. These criteria were:

(a) scores of 10 or more on the ASQ;

(b) students indicating that they had previously made an attempt on their life;

(c) comments written on the questionnaire giving cause for serious concerns.

Using the cut off point outlined above and the additional set of criteria the initials and dates of birth for students identified as at risk were compiled into school lists and forwarded to school counsellors.

NUMBER AND CHARACTERISTICS OF IDENTIFIED STUDENTS

In T_1 252 students or 14% of the sample were identified as 'at risk'. In T_2 325 students or 19% of students were identified as 'at risk'. Table 8.1 provides a gender breakdown of identified students in both time periods. It can be observed that in both time periods a higher proportion of females were identified than males but that this difference was more pronounced in T_1.

Table 8.1: Identified students by gender

		N	Not identified N (%)	Identified N (%)
T_1	Male	1000	879 (88)	121 (12)
	Female	810	680 (84)	130 (16)
	Overall	1813	1561 (86)	252 (14)
T_2	Male	935	763 (82)	172 (18)
	Female	772	621 (80)	151 (20)
	Overall	1714	1389 (81)	325 (19)

Mean scores across a range of mental health scales are given in Table 8.2. Reflecting the fact that most of these scales formed part of the criteria for identification, significant differences can be seen between those identified and those not.

Table 8.2: Mental health of identified students

		Not identified (Mean)	Identified (Mean)
Depression	T_1	10.1	28.1
	T_2	8.7	25.8
Anxiety	T_1	3.9	11.5
	T_2	3.2	9.8
Hopelessness	T_1	3.0	7.5
	T_2	2.6	8.3
Self-esteem	T_1	40.7	32.5
	T_2	41.6	32.5
Locus of control	T_1	13.5	19.2
	T_2	12.1	18.3

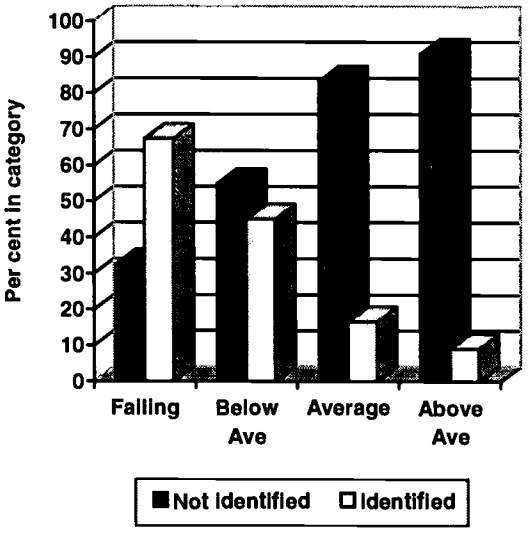
Crosstabulations comparing identified students with those not identified were performed for a range of socio-demographic variables using data from T_2. The data for 'who students live with' is shown in Table 8.3. Risk ratios are also shown in this table and indicate that students not living with two biological parents were at considerably higher (1.4 to 2.3) risk of being identified than those who lived with two biological parents.

Table 8.3: Who identified students live with

	Not identified N	%	Identified N	%	Risk
Two natural/ biological parents	968	84.9	172	15.1	
Mother alone	199	78.7	54	21.3	1.41
Mother and stepfather	126	69.2	56	30.8	2.04
Father alone/ stepmother	43	67.2	21	32.8	2.17
Other	33	66.0	17	34.0	2.25

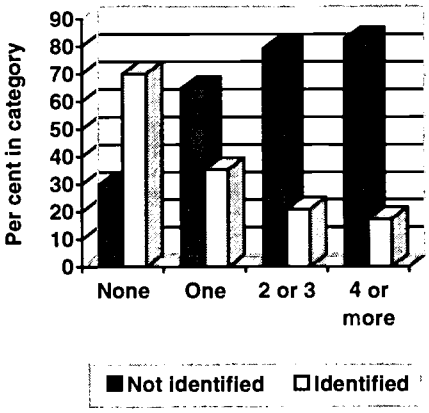
Similarly, students reporting less than average academic performance (Figure 8.1) were at increased risk of being identified compared with students reporting average academic performance (RR failing = 4.0; RR below average = 1.6).

Figure 8.1: Academic performance by identification



The relationship between the number of close friends reported by students and identification is shown in Figure 8.2. Compared with students reporting 4 or more close friends, students with fewer friends than this were at increased risk of being identified (RR no close friends = 4.1; RR 1 close friend = 3.1; RR 2 or 3 close friends = 1.2).

Figure 8.2: Number of close friends by identification



SCHOOL COUNSELLOR FEEDBACK

School counsellor feedback regarding identified students provides one source of information about the extent to which our program has correctly identified students 'at risk'. At the end of 1995 and 1996 a questionnaire was sent to school counsellors asking them to rate different aspects of the program. In this section the results from items in the Time 2 evaluation questionnaire related to identified students are presented. Of the 16 participating schools in the project, feedback at the time of writing had been received from 14 school counsellors.

School counsellors were asked to indicate whether, in their opinion, the questionnaire appropriately identified young people at risk of developing an emotional disorder at some time in the future. Ten counsellors agreed that the questionnaire did but two indicated that they believed it did not. The remaining two counsellors neither agreed nor disagreed, yet their comments suggested that some at-risk students were being appropriately identified. Their concern seemed to be that other students were not able to be identified when they are most likely 'at risk', due to a number of factors such as absenteeism, their refusal to complete the questionnaire or answer all of the questions, or providing distorted information.

Counsellors were also asked how many students identified by us were already receiving help - an indication that our assessment was at least congruent with someone else's. Of the 292 identified students from these schools (90% of all identified students) counsellors reported that 21% were already receiving help and that 11% of students had been referred for further assistance. In addition, having had an opportunity to personally interview each student, counsellors were asked to rate (using the categories major, moderate, a little, not at all) how concerning the presenting problems were. The majority (56%) of our identified students were viewed as of concern (either major, moderate or a little) but nearly a quarter (24%) were viewed as not concerning at all. Table 8.4 sets out the data.

Table 8.4: Counsellor feedback on identified students in Wave 2

	%
Already receiving help	21
Of major concern	14
Of moderate concern	22
A little concerning	20
Not concerning at all	24
Not yet interviewed	7
Referred on for further help	11

* Individual students may be in more than one category

Overall the majority (90%) of counsellors felt that they had coped well with the clarification interviews, but nearly all wished to emphasise the time consuming nature of the work. Counsellors were concerned that because of time pressures they had not been able to do justice to identified students and desired more training or increased support from the Southern Child and Adolescent Mental Health Service. Difficulties counsellors found with identified students concerned their reluctance or refusal to disclose information, either on the questionnaire or at the clarification interview. Some insisted that they had lied on the questionnaire or that there was no problem, and others admitted messing around or treating the questionnaire as a joke.

Counsellors reported a wide range of responses from the parents of identified students. Some parents were glad of the information, co-operative with the school and appreciative of the support provided. Others were 'very distressed' about their child's identification and concerned about some of the questions asked in the questionnaire. A percentage of parents appeared not to be interested in the fact their child had been identified and did not wish to engage in further discussions about arranging follow up intervention.

Counsellors were asked what aspects of the program they had felt to be worthwhile. The most frequent response centred on the identification of students who had not previously come to their attention. The program also presented counsellors with an opportunity to contact students who had previously been difficult to approach. Many counsellors again raised the issue of the 'huge drain on resources' and repeated the request for additional support from CAMHS.

9 CONCLUDING REMARKS

The overall objective of the Early Detection of Emotional Disorders program has been to identify and assist young people with behavioural and emotional problems prior to their identifying themselves through some crisis or adverse action. In this respect, the program has been successful in the sense that in both T_1 and T_2 students previously not recognised as in need of assistance were identified by us and provided with an opportunity to receive some further help. Through clarification interviews with school counsellors and referrals to Southern CAMHS we believe that many of these students were correctly identified. Several students had serious mental disorders previously undiagnosed and untreated.

This report has presented preliminary results from the first two years of the ED^2 program. Since the program began in 1995 we have received literally hundreds of requests for information and progress updates about the program. This interest has been greatly encouraging and it is hoped that this report about our experience to date will provide useful information to all those concerned with youth suicide prevention.

The data and analyses presented here are preliminary, and of course may be subject to some minor change. The analyses have provided simple descriptive statistics on nearly all items in the self report questionnaire. In addition we have outlined our process for identifying vulnerable students and school counsellor feedback about the assistance which was offered to them.

We have deliberately confined the statistical analysis in this report to the very basic level. This has been done for two main reasons. First, we wish this report to be accessible to as many people as possible - particularly our stakeholders in the program (school staff, parents and school students). Secondly, the data itself is complex and at the time of writing members of the program team have not yet fully digested all of the results, nor have we finally decided the most appropriate statistical methodologies to be used.

Planning for T_3 (the final wave) of the program is currently under way. In the forefront of our planning is the need to address the high attrition rate that the program suffered between T_1 and T_2. As detailed in Chapter 2, the overall participation rate of students in the program is high - around 80% of the potential school year population. However, this participation rate has not translated to a high 'cooperation rate'. Many students in T_2, particularly those from groups with a high risk of being vulnerable to difficulties, have chosen not to provide information which would enable them to be identified and hence matched to their T_1 questionnaire.

Following the administration of the questionnaire in T_3 (scheduled for June 1997) and data processing, the statistical analysis of predictors in Year 8 for emotional disorders and suicidal behaviours in Years 9 and 10 will begin in earnest. One of the key outcomes from this work will be a shorter, more rigorous instrument (validated by a diagnostic interview schedule) which retains accuracy at predicting the most severe disorders in young people. If we are able to demonstrate the predictive value of this revised instrument, then routine testing of all Year 8 students in the future would allow the development of coherent plans for high school life with improved opportunities for each child to attain their optimum academic, social and personal performance.

Finally the authors of this report, on behalf of all members of the program team, would like to thank the many school staff (principals, teachers and counsellors), parents and students who have contributed time, effort and moral support to the program. Your efforts are very much appreciated.

ADOLESCENT SUICIDE QUESTIONNAIRE (ASQ-R)

Suicidality was assessed using the Adolescent Suicide Questionnaire - Revised (Pearce & Martin, 1994). Derived from the concept of a spectrum of suicidal behaviours, the ASQ asks respondents about their experience of suicidal thoughts, plans for suicide, threats of suicide, deliberate self-harming behaviours (DSH) and attempts at suicide (e.g. 'Have you ever tried to kill yourself?'). Respondents indicate whether they have engaged in this series of behaviours, either no ('never'), or yes, ranging from 'yes, over 12 months ago' to 'yes, in the last month'. They also rate how likely they are to engage in each behaviour in the next 6 months. The questionnaire asks subjects to rate the detail of suicide plans, the seriousness of suicide threats and the frequency of these behaviours in the past 12 months. Respondents who engage in deliberate self-harm and attempt suicide are asked to describe what they did and the frequency of this behaviour in the last 6 months. For attempts, they were asked whether they went to a doctor or health facility or were admitted to hospital.

A composite suicidality score was calculated for identification purposes, based on responses in the 'never' and 'ever' categories. Students who indicated they had ever engaged in any of the behaviours received a score based on the particular behaviours or combination of behaviours in which they engaged. This is based on the idea of a continuum of suicidality in which ideators are at the beginning of the spectrum and attempters at the most extreme end. Students engaging in ideation were given a score of 1, planners a score of 2, students making threats 3, deliberate self-harmers 4, and attempters scored 5. Any scores on these behaviours were added up to a maximum score of 15.

Unpublished data from a sample of high school students (N=70) indicates moderate to high test-retest reliability (Phi coefficients from nominal data ranging from 0.59 to 0.91; Pearson's r's ranging from 0.58 to 0.89) over a three week interval. A composite index derived from the yes/no responses to the spectrum of suicidal behaviours (thoughts, threats, plans and DSH) identified suicide attempters from non-attempters with 96 per cent sensitivity and 79 per cent specificity (Pearce and Martin, 1994).

ADULT NOWICKI-STRICKLAND INTERNAL-EXTERNAL LOCUS OF CONTROL SCALE (ANSIE)

Duke & Nowicki (1973) argue that the ANSIE has shown better predictive use and is as good a measure, and in some instances better, than the original Rotter Internal-External Scale (1966) for measurement of locus of control. They also contend that both the Child and Adult Nowicki-Strickland Scales have demonstrated acceptable test-retest reliability (r = .63 to .71), and have been standardized with both children and young adults. They report internal consistency values between .66 and .75 for the ANSIE and refer to considerable evidence of construct and discriminative validity and the lack of relationship with social desirability.

ANXIETY

Individuals with anxiety are generally troubled, concerned about imminent danger or difficulty, or in a state of uneasiness. During a specific state or episode of anxiety, the individual is overcome by a state of fear which may include feeling threatened by some impending disaster, perhaps death, or of losing control of themselves (Snaith & Turpin, 1990) This fear is also accompanied by excessive worry and physiological symptoms such as restlessness, fatigue, lack of concentration, irritability, muscle tension and disturbed sleep (American Psychiatric Association, 1994).

Anxiety, like depression, can occur as a normal reaction to past experience, or can be classed as abnormal. An individual may be seen to be suffering abnormal anxiety (an Anxiety Disorder) if the anxiety experienced is out of proportion to the actual situation, or there is no recognisable threat. Anxiety disorders include anxiety experienced as a constant state of fear or anxiety which occurs in discrete episodes, such as panic attacks and phobias (American Psychiatric Association, 1994). It has been estimated that around 10 per cent of the general population suffer isolated panic attacks, while 3 per cent suffer recurrent attacks, and up to 2 per cent have a panic disorder (Weissman et al., 1989).

A number of studies in adult populations have shown that the rate of completed suicide amongst suffers of anxiety disorders is nearly ten times that of the general population (Pokorny & Lomax, 1988). One study found that the frequency of both suicidal

ideation and attempts in subjects with panic disorders was almost eighteen times that of subjects without psychiatric disorder, a finding which cannot be explained by the co-occurrence of major depression or alcohol or drug abuse (Weissman et al., 1989). Furthermore, anxiety related symptoms, including panic attacks, insomnia, poor concentration and alcohol abuse, were found to be the factors most strongly related to completed suicide of a person within one year of their assessment (Fawcett et al., 1990). As detailed in Chapter 5, there is some evidence of a similar relationship with adolescents.

BECK HOPELESSNESS SCALE

Hopelessness was measured using the Beck Hopelessness Scale (Beck et al., 1974). This 20-item self-report instrument assesses the degree to which an individual holds negative expectations towards their future. The underlying assumption is that hopelessness can be objectively measured by defining it as a system of cognitive schemas with a common denominator of negative expectations. The scale has been used extensively with adolescents, and has been shown to have high internal consistency (KR20 coefficient alpha = 0.93) and a relatively high correlation with clinical ratings of hopelessness (r = 0.74) in a population of 294 hospital patients with recent suicide attempts (Beck et al., 1974). It was chosen in preference to the Hopelessness Scale for Children (Kazdin et al., 1983) because its psychometric properties are more impressive, and adult-level language seems more appropriate for an adolescent population.

BRIEF ADOLESCENT RISK-TAKING SCALE (BARTS)

This scale was developed by members of the program team for use with adolescents (12-18 years), given that a suitable, valid, reliable and accurate brief scale for this purpose was lacking. In studies undertaken by members of the program team (Martin, Clarke & Pearce, 1993; Martin, Hazell, Sandercock & Giannakoureas, unpublished), the scale has shown a normal curve distribution for both genders on a large high school population (N>1300). This work has also demonstrated that the scale has internal consistency (Cronbach α = 0.69), construct validity and correlates highly with the Achenbach Youth Self Report delinquency subscale (n = 247, r = 0.68, covariance 22.68). BARTS has a reliability coefficient of 0.96. The scale appears useful as a screen for risk-taking propensity.

CENTRE FOR EPIDEMIOLOGIC STUDIES DEPRESSION SCALE (CES-D)

This is a 20-item self-rating scale in which respondents are asked to indicate the frequency of particular depressive symptoms in the past week, using four points ranging from 'rarely or none of the time' to 'most or all of the time'.

The symptoms chosen as items in the CES-D were derived from other longer, well-known and validated depression scales such as Beck and Zung, and from the Minnesota Multiphastic Personality Inventory (Casey, 1990). The CES-D has been shown to assess fluctuations in mood and to differentiate between acutely depressed subgroups, and between clinical and normal populations. The CES-D has been found to have a sensitivity of 66 per cent and a specificity of 94 per cent (Myers & Weissman, 1980).

Radloff (1977) found that the CES-D has high internal consistency and adequate test-retest reliability in both community and psychiatric settings. Its validity was established through its correlations with other self-report measures, clinical ratings, and its relationships with other relevant variables. The study also showed similar levels of reliability, validity and factor structure between various demographic characteristics in the general population. As a result, Radloff (1977) recommended the CES-D as a useful tool in epidemiological studies.

Roberts et al. (1990;1991) tested the use of the CES-D on high school students. Internal consistency and test-retest reliability, and sensitivity and specificity for detecting episodes of current depression and dysthymia were adequate and comparable to those found with adult samples. These authors noted a pronounced gender effect with females scoring consistently higher and found that the cut off score of 16 used for adults classified half of the sample as depressed. From this, it appears that the CES-D may be appropriate for use with adolescents but in using the cut-off of 16 there is a risk that the scale generates false positives.

Garrison et al. (1991b) assessed the performance of the CES-D as a screen for adolescent depression in a longitudinal study of depression and suicidal ideation. Using receiver-operating characteristic curves, these authors determined optimum cut points for screening purposes of scores of 12 for males and 22 for females. Using these cut points, very few if any 'true' cases of depression will be missed, but large percentages (75-87%) of those referred for further interviewing will not have clinical depression.

DEPRESSION

Individuals with depression experience changes in their thoughts and feelings, including feelings of guilt, dejection, sadness, worthlessness and hopelessness. In addition, they commonly undergo changes to their appetite, disturbance of sleep, loss of concentration and of energy, and loss of interest in activities they had formally enjoyed. Depression alters how they react to their environment, and even facial expressions and posture (Blumenthal, 1990).

The concept of 'depression' is used to describe a broad range of mental health concerns. Depression may be an altered state of mood occurring as a normal response to negative events. Depression may also refer to an abnormal state, of which there are three types - symptom, syndrome, or disorder. As a symptom, depression may be associated with a variety of mental disorders, such as an eating disorder. As a depressive syndrome it is determined from the use of rating scales (as in the present study), whereas depressive disorders are identified through clinical diagnosis (Lehtinen & Joukamaa, 1994).

Studies have shown that between one-tenth and one-third of the general population report suffering from depressive symptoms (Lehtinen & Joukamaa, 1994). However, the prevalence of clinically defined depressive disorders range between 2% and 6% for males and from 6% to 12% in females. The average age of onset of major depression and severe anxiety states is between 15 and 16 years. Several cross-sectional and longitudinal studies have shown that up to 24% of young people will suffer an episode of major depressive disorder (Martin, 1996b).

DRUG USE

This questionnaire was adapted from a survey of South Australian school children by the Drug and Alcohol Services Council, over the period 1986 to 1989 (Mawby et al., 1991). The types of drugs and categories chosen for use in the YAC were a condensed version of their questionnaire.

HOPELESSNESS

Beck et al. (1974, p.861) depicts hopelessness as 'one of the core characteristics of depression'. Further, they describe hopelessness as a loss of motivation, alongside pessimistic thoughts and beliefs, and uncertainty about the future (Spirito et al., 1988). Hopelessness is believed to be associated with experiences of loss and rejection such as the rejection caused by distant, hostile parents, as in the case of adolescents (Allison et al., 1995).

HOSPITAL ANXIETY AND DEPRESSION SCALE (HAD)

The Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983) was originally designed as a screen for anxiety and depression in non-psychiatric hospital departments. It provides a range of scores, indicating different levels of morbidity, and has demonstrated validity (Hamilton & Shapiro, 1990). Abiodun (1994) found that the HADS Anxiety subscale had a sensitivity of 87.5 per cent and a specificity of 90.6 per cent in a Nigerian community sample.

In the present study, two questions relating to phobic symptoms were added to the bottom of the HADS anxiety subscale. Scores from these questions are included in the total anxiety score, so some care should be exercised if comparing our data with that obtained from other samples.

There is some controversy relating to the ability of the HADS to adequately distinguish cases of anxiety from those of depression. In one study, intercorrelations between the anxiety and depression subscales of the HADS were found to be statistically significant at $r = 0.49$ (Bramley et al., 1988). This correlation was found to be lower than a number of other such self-assessment scales in the study, suggesting that the HADS was better at detecting independent aspects of emotional disorders. Further, they believed that any flaws in the ability of rating scales to distinguish between anxiety and depression was as much a function of the problems with the concepts and definitions of these factors, as with the construction of the scales.

INFLUENTIAL RELATIONSHIPS QUESTIONNAIRE

The Influential Relationships Questionnaire (IRQ; Baker et al., 1984, 1987; Kazarian & Baker, 1987) was used to assess parental style. This 37-item self-report instrument comprises the Care and Protection scales of the Parental Bonding Instrument (PBI; Parker et al., 1979; Cubis et al., 1989), and a 12-item Criticism scale. The Criticism scale of the IRQ uses the same reference format as the PBI and includes a series of items with face validity (e.g. 'Points out my weaknesses rather than praising me'). For ratings of the two most influential people in a respondent's life, the authors report moderate to high test-retest reliability (*r*'s ranging from .53 to .85) and internal

consistency (KR-20 coefficient alphas ranging from .76 to .91) for the Care, Protection and Criticism scales .

MCMASTER FAMILY ASSESSMENT DEVICE

The General Functioning Scale of the Family Assessment Device (FAD-GF) was used as a global measure to determine the level of family functioning. Students indicate the extent to which they agree or disagree (using a four point scale) with 12 statements about their family's way of relating. This shortened version of the FAD was derived from an item analysis of the full scale of 60 items. The scale has been shown to have good reliability, internal consistency and validity in distinguishing between non-clinical families and families attending a psychiatric service (Byles et al., 1988).

Martin et al. (1995) showed that family dysfunction measured on the FAD was associated with thinking and planning suicide, deliberate self-harm, suicide attempts and severe depression. In later research, the relationship between sexual abuse, depression, suicidal behaviours and family dysfunction was investigated (Martin, 1996). In this study, it was found that the risk of a self-reported suicide attempts by adolescents in dysfunctional families was 1.5 times that of functional families.

ROSENBERG SELF-ESTEEM SCALE (RSES)

The RSES is widely viewed as a good measure of self-esteem. Hagborg (1993) found, through the use of correlations and multiple regression analyses, that the RSES has a strong relationship with global self-worth above that of other self-concept domains. However, there is controversy surrounding the unidimensionality of the measure following the finding that the RSES has two factors. These two factors yielded by factor analysis were self-enhancement or positive self-esteem and self-derogation (Kaplan & Pokorny, 1969). Hagborg (1993) strongly supports Rosenberg (1965, 1979) in his view that this measure is a convincing indicator of global self-esteem in adolescents and also unidimensional in nature, as the two positive and negative factors show similar patterns of correlations.

Rosenberg (1965) reported that the RSES had a test-retest reliability coefficient of .82 and high face validity. The measure has been used in numerous studies with a variety of contexts and subject types (Brems & Lloyd, 1995). It has also been validated in non-Western countries. Chiu (1988), Simmons (1987) and Wylie (1974) recommend the measure and support Rosenberg's claims of validity due to substantial evidence from studies indicating its reliability and validity.

SELF-ESTEEM

Self-esteem has proved a difficult construct to measure, as it means different things to different theorists, and is often described in vague terms (Bogan, 1988). Rosenberg (whose measure we use in this study), views self-esteem as the attitude we hold towards our personal worthiness, importance and attractiveness (Glassman, 1986).

Rosenberg's definition of self-esteem is 'the evaluation which an individual makes and customarily maintains with regard to himself; it expresses an attitude of approval or disapproval' (Rosenberg, 1965, p.5).

SELF-REPORT DELINQUENCY SCALE

The YAC uses Self-Report Delinquency Scale from Rushton and Chrisjohn (1981). This scale was originally based on the work of Gibson (1967) and Shapland et al. (1975). The scale comprises 20 items and we have added four from the DSM-IV (American Psychiatric Association, 1994) to aid correlation with DSM-IV diagnoses.

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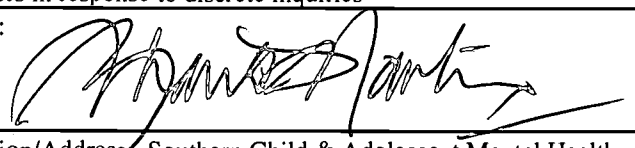
Signature: 	Printed Name/Position/Title: Assoc Professor Graham Martin Executive Director	
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