PREDICTING FURTHER SUICIDAL BEHAVIOUR

IN ATTEMPTED SUICIDE PATIENTS

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ABSTRACT

This study examined the psychological determinants of future suicidal behaviour and ideation in attempted suicide patients. The approach taken was to identify personality variables that insulated the suicide attempter against further attempts and suicidal thoughts. Three specific areas were focused on. Firstly, past research has shown attempters to be under considerable stress both before their attempt and up to two years afterwards. Self esteem was tested here as a potential insulator against stress, and in particular, low self esteem as an indicator of future suicidal behaviour. Secondly, many studies have noted the intimate relationship between depression and suicide. Beck (1967) postulated that the cognitive variable of hopelessness moderates the relationship between depression and suicide. While hopelessness has been implicated in past studies of suicidal intent, the present research tested hopelessness as a predictor of suicidal behaviour and ideation. A further cognitive variable, rigidity, has been found previously to be a characteristic of suicidal individuals. This study predicted rigidity is more a function of the depressed condition of attempters, rather than being directly involved in suicidal behaviour. Thirdly, the fact that suicidal individuals lead socially isolated lives has been noted by many researchers. The suicide attempter's social relationships are generally unsatisfying and a major source of interpersonal friction. This study examined the role of social skills in the development of suicidal behaviour, predicting low social skill would be associated with future suicidal behaviour and ideation. Overall, the research investigated the influence of cognitive, social skill and self esteem variables on the development of

suicidal behaviour.

As well as the above theoretical questions, the study also examined the predictive validity of the Zung Index of Potential Suicide. This scale uses clinical factors as opposed to the traditional demographic approach to predicting suicidal behaviour.

The subjects were 67 attempted suicide patients admitted to three New Zealand general hospitals. Each completed personality measures within two days of their admission to hospital. All subjects were contacted six months after their discharge and 46 completed a follow-up questionnaire. This questionnaire measured current level of depression, suicidal ideation and whether any further suicide attempts had been made.

The results showed 37% of attempters to have made at least one further attempt and 17% to have been admitted to hospital for a repeat attempt. Both low self esteem and high hopelessness significantly distinguished repeaters from first time attempters at admission, and those patients making a repeat attempt over the six month follow-up period. Hopelessness was significantly related to suicidal ideation on admission, while self esteem was related to both suicidal ideation and depression at follow-up. Poor social skills did not predict future depression, suicidal ideation or attempting. The relationship between depression and the variables of suicidal ideation and the number of previous suicide attempts, was largely explained by hopelessness. As predicted, cognitive rigidity was significantly related to depression at admission but not to suicidal behaviour or ideation. The Zung Index

of Potential Suicide, while significantly related to suicidal ideation and the number of previous suicide attempts, was a very poor predictor of future suicidal ideation or behaviour.

The results suggest psychological variables offer considerable potential over demographic factors in assessing suicidal risk. The differential effects of hopelessness and self esteem imply a division in terms of long and short term suicidal risk is appropriate, with different variables involved over the two periods. The task for future research is to identify the specific components of hopelessness and self esteem as well as other psychological variables involved in suicidal behaviour.

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Finally I would like to dedicate this thesis to Daralyn, my wife, who has worked so hard and helped so much.

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CHAPTER ONE

OVERVIEW

1.1 Incidence

The 1960's and 70's have seen a dramatic increase in the rate of attempted suicide in New Zealand and other Western countries (Weissman, 1974; Werry and Pedder, 1976; Wexler, Weissman and Kasl, 1978). The number of attempted suicides occuring each year in New Zealand seems now to be leveling off at over 2,000 admissions per year, However the suicide rate has remained fairly constant fluctuating between 8.4 and 11.7 per 100,000 over the past 20 years (see Figure 1).

At around 2,300 per year the number of suicide attempts admitted to New Zealand hospitals represents a major health problem that makes considerable demands on medical and psychiatric resources. Higher attempt rates are reported in the United States (Wexler et al, 1978) and Britain where drug overdose is the most common acute medical admission for women and the second most common for men (Pallis and Pierce, 1979). Undoubtably many more persons attempt suicide than hospital figures show but for various reasons such as intervention by family or G.P. they never reach hospital. Many of those that do are treated in Accident and Emergency Departments and discharged. Efforts to find the true level of attempted suicide in the general population show hospital statistics to be a low estimate. Kennedy and Kreitman (1973) in a survey of attempted suicide in general practice, report that hospital based suicide statistics underestimate the frequency of attempting by 30%. Turner (1982) studying 224 incidents of attempted
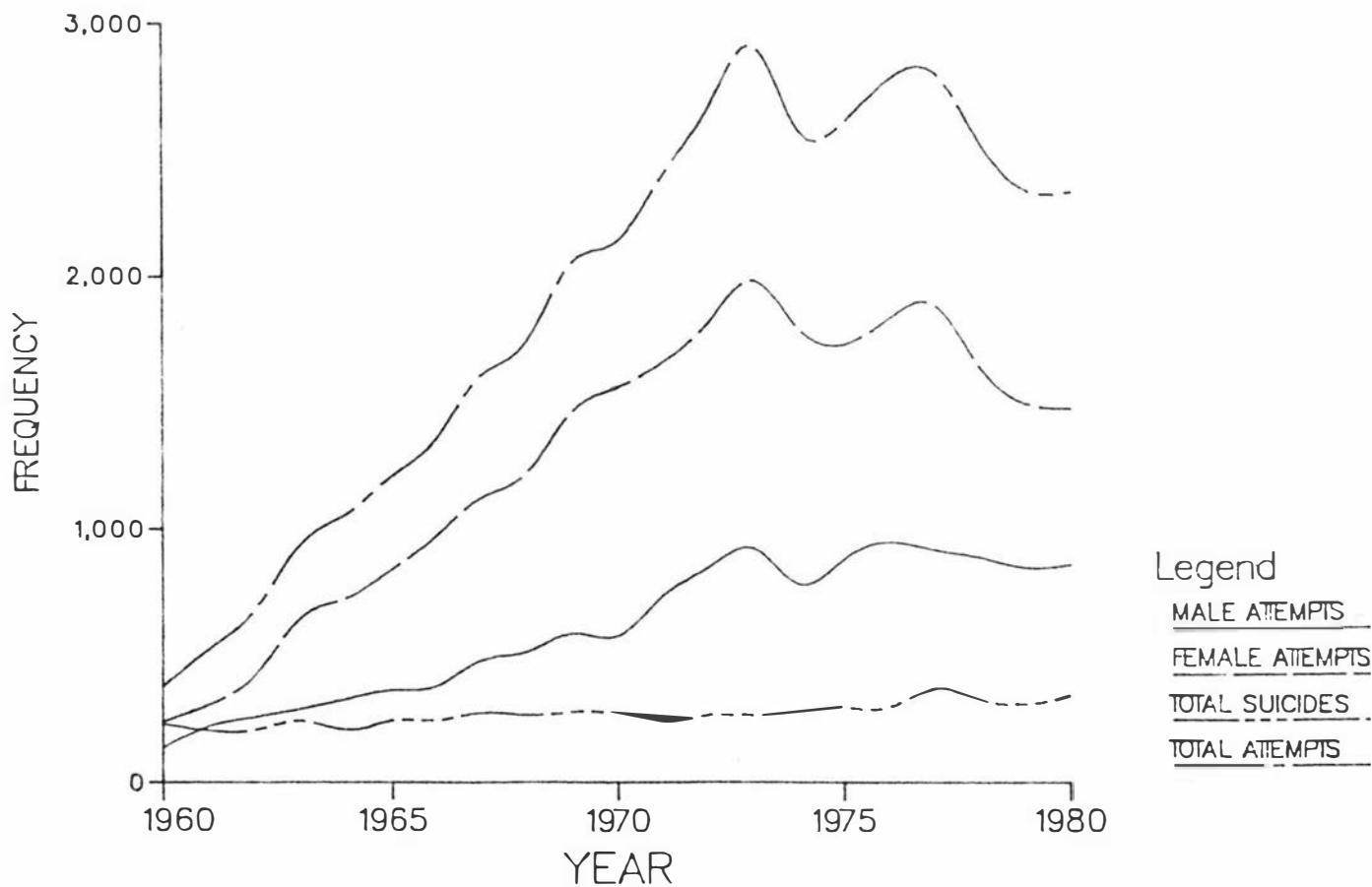
FIGURE 1; NUMBER OF SUICIDES AND ATTEMPTED
SUICIDES IN NEW ZEALAND 1960—1980

suicide in a group general practice, reported that 34% of these incidents were not admitted to hospital. This was because 6% were treated and discharged at hospital, 13% were treated by a G.P. and not referred to hospital and a further 15% were treated by a G.P. after a period of concealment by the patient. In an attempt to find how much the incidence of suicide attempts is under-reported, Whitehead, Johnson and Ferrence (1973) conducted a major survey of hospitals, social agencies, nursing homes, general practitioners and the county jail in London, Canada. They found the total number of cases to be double those given by hospital figures and estimated the true rate was at least four times greater than hospital figures.

1.2 Attempter Characteristics

New Zealand medical statistics and the few survey studies published show male attempted suicides to be outnumbered by female attempters at a ratio of approximately one male to two females. Attempted suicides are more common among younger age groups, peaking between 19-24 for both males and and females (see Figure 2). The method of suicide attempt is predominately by an overdose of prescribed drugs. Official statistics for 1980 (Health Department, 1981) show 88% of suicide attempts are by this method. Benzodiazepines have become the drugs most frequently used in overdoses, evident in 37% of cases, followed by analgesics (18%), and tricyclic antidepressants (11%). Approximately half of overdose cases take at least one other drug, with the most frequent secondary drugs being tricyclic antidepressants (36%) and benzodiazepines (27%) (Adam, Bianchi, Hawker, Nairn, Sanford and Scarr, 1978). The next most common method after drug overdose is self laceration, typically the wrists but occasionally the neck or arms.
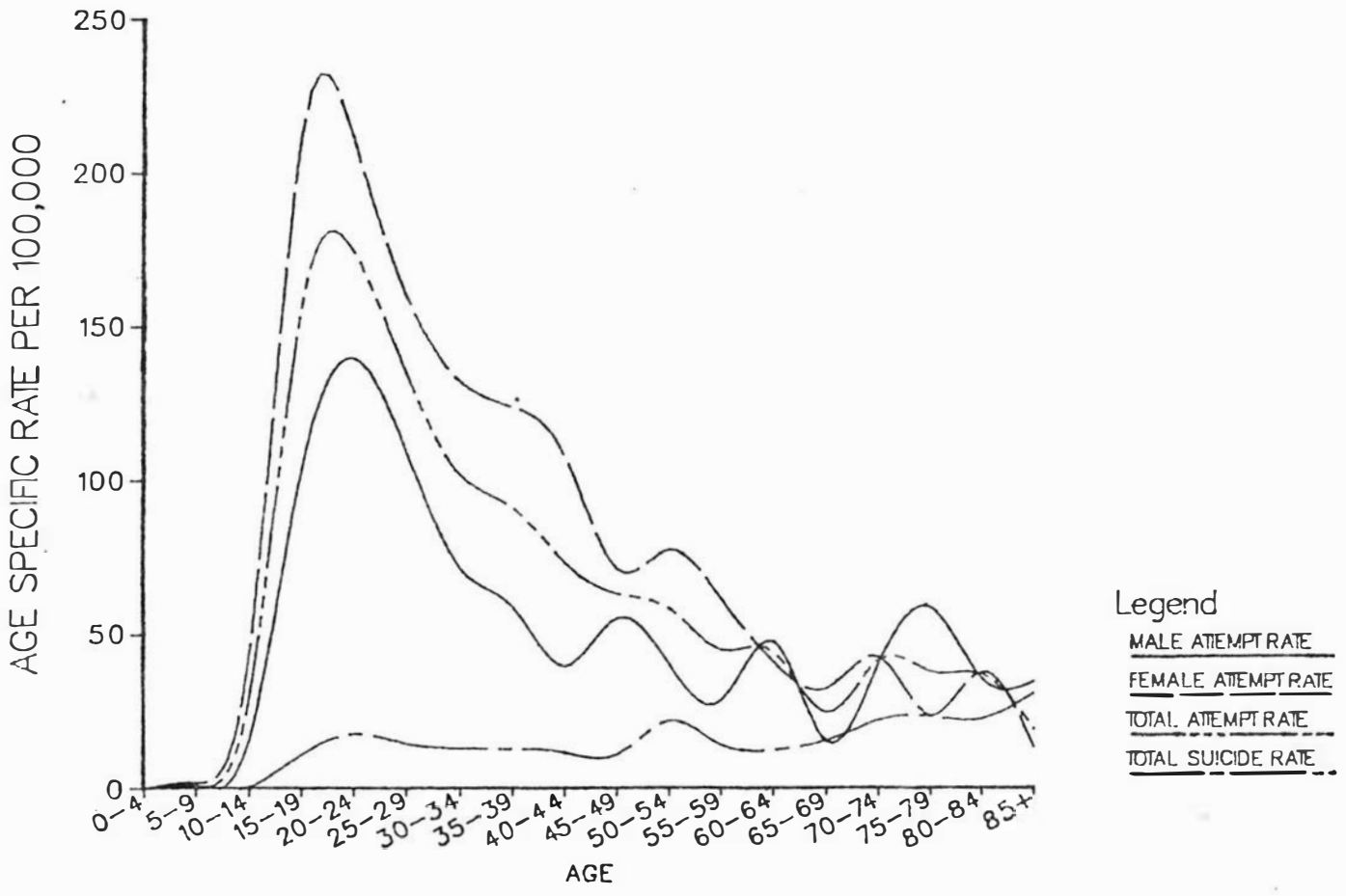
FIGURE 2: RATE OF SUICIDE AND ATTEMPTED
SUICIDE BY AGE IN NEW ZEALAND FOR 1980

The attempt is usually made in a period of intense interpersonal conflict, often after the severing of a close personal relationship. Werry and Pedder (1976) found interpersonal problems to be a clear precipitating factor in 62% of 550 patients admitted to Auckland Hospital's Accident and Emergency Department. Other important factors were sexual problems (including unwanted pregnancy) in 18%, and 14% of patients had drug or alcohol problems. Survey studies on attempted suicide patterns in New Zealand show the attempter is disproportionately an inner city dweller, unemployed, separated from their spouse, from an unstable family background, and a lower socio-economic group (Adam et al, 1978; Howell, White, Monigatti, Pidd, Rawnsley and Webster, 1980; Werry and Pedder, 1976). These factors are also common to attempters in other Western countries (Weissman, 1974).

1.3 Repeat attempts and suicide

While in itself admission to hospital for attempted suicides is a considerable medical and psychiatric problem, it is made more important because of two implications. Firstly, a significant percentage of those patients admitted to hospital will be back within six months with another attempt. Secondly, attempted suicides have a high risk of killing themselves at a later date.

A one year cohort of British suicide attempters were followed for two years to determine the repetitiveness of attempted suicide behaviour by Bancroft and Marsack (1977). They found 18% were admitted for one or more attempts over the two year period with the majority of these (13%)

occuring in the six month period following the initial attempt. These are similiar to rates reported in a Scottish sample (Buglass and Horton, 1974b) but lower than a New Zealand follow-up study of attempted suicides (Adam, Valentine, Scarr, and Streiner, 1983) where 34% of patients made further attempts over a 18-24 month follow-up period. All these studies are likely to underestimate the true level of reattempting since not all patients were traced, not all would be readmitted to the same hospital, and many may have attempted and been treated by a G.P. or family members without admission to hospital. These studies therefore set the lower level of reattempting. The true figure remains largely unknown.

An overdose is also the most frequent method used for reattempting. While the overdose is popularly seen as trivial and indicative of a low intent to die, it carries a high rate of medical complications. Fox and Weissman (1975) in a study of suicide attempters' methods and intent noted; "While the patients taking overdoses had the least intent to kill themselves, the medical effects of their attempts were most serious" (p. 31). For example Paracetemol, a common household analgesic can be very dangerous in overdose because of liver damage (Breen, Bury, Desmond, Forge, Mashford, and Whelan, 1982; Davidson and Eastham, 1966). Knowledge of drug toxicity and interaction is extremely limited in the overdose population (Gazzard, Davis, Spooner and Williams, 1976), increasing the likelihood of an unintentional fatal attempt. This underlines the importance of accurate identification of the potential repeater.

While attempted suicide is often categorised alongside suicide it is

simplistic to classify suicidal behaviour along a continuum from the least serious ideators through threateners and attempters to completed suicides with suicides being just a more advanced form of self destructive pathology. Rather, these groups form clusters of distinctive yet overlapping populations. Incidents of attempted suicides generally outnumber suicides by about ten to one, although this varies across the age range from a peak of around 100 to 1 between the 15 to 24 age range falling to 2 to 1 at 55 or older. Suicide attempters are most often young and female while suicides are more likely to be male and older (see Figure 2).

The overlapping nature of the relationship between attempted suicide and suicide means attempted suicide patients represent high suicidal risks. Tuckman and Youngman (1963) have stated that the attempted suicide patient is 147 times more likely to commit suicide than members of the general population. Other researchers estimate that one to two percent of attempted suicides will kill themselves in the year following their attempt with 10% eventually taking their own life (Kessell and McCulloch, 1966; Stengel, 1972). This has recently been supported by a New Zealand study where 2% of attempted suicides had killed themselves over a 18-24 month follow-up period (Adam et al, 1983).

1.4 Problems in assessing suicidal risk

For the mental health professional, assessment of a patient who has attempted suicide is a perplexing task. A decision must be made regarding the patient's current suicidal risk, necessary psychological

treatment, and future contact with helping services. Decisions on any one of these questions may have the consequence of restricting the patient's freedom, and using valuable psychiatric care.

In order to aid rational decision making the mental health professional may seek help from relevant suicide prediction literature. However they are likely to be disappointed. Follow-up studies of attempted suicide patients are infrequent, and those using psychological factors as independent variables, rare. The prediction scales that are available use mostly demographic information. Those tests which combine clinical and demographic factors have as yet largely untested predictive validity.

The absence of material to aid the assignment of suicidal risk is due predominately to a number of problems that beset research on suicidal behaviour. These problems are firstly, the difficulty in predicting a low frequency behaviour, secondly indistinction in terms- particularly between different types of suicidal behaviour and suicide itself, and thirdly, the obvious logistic and ethical difficulty obtaining data from suicides before they kill themselves. This results in the reliance on information from secondary sources or the use of substitute populations such as attempters or threateners. Other problems result from the taboo that still surrounds suicidal behaviour, creating difficulty in obtaining accurate records and information.

While attempted suicide may have risen to a point which some researchers have called "an epidemic" (e.g. Weissman, 1974), suicide itself is a statistically infrequent event. Rosen (1954) makes the

point that prediction by psychological test of such a low frequency behaviour is very difficult and even a test with reasonable predictive validity will result in a prohibitive number of false positives. Rosen gives the example of a test that correctly identifies 75% of suicides in a psychiatric hospital. In correctly identifying 30 of the 40 suicides the test has misclassified 2990 of the 11,960 non-suicidal patients as suicidal. Obviously to cope with such a large number of false positives is beyond reasonable bounds. Raising the cut-off score would result in less false positives, but fewer suicides would be identified.

This dilemma has been underlined by a recently published study. Pokorny (1983) tested 4,800 psychiatric patients on a variety of instruments and followed them for a period of four to six years. The results were very dissapointing in terms of predicting suicidal death. Pokorny concludes "...each trial missed many [suicide] cases and identified far too many false positive cases to be workable. Identification of particular persons who will commit suicide is not currently feasible, because of the low sensitivity and specificity of available identification procedures and the low base rate of this behaviour" (p. 249).

To improve the predictive utility of suicide prediction scales the researcher may either work within a population of known high risk such as depressives or attempted suicide patients. He may also choose to predict a more frequently occuring behaviour such as attempted suicide.

The fact that cases labelled "attempted suicide" may vary from a person

swallowing a small number of minor tranquilisers to gunshot wounds has prompted some researchers to call for the abandonment of the term "attempted suicide" altogether. The term has been criticised for assuming suicidal intent - an attempt at committing suicide, whereas this is not often or necessarily the case. Various other terms have been proposed such as "self-poisoning" (Kessel, 1965), "pseudocide" (Lennard- Jones and Asher, 1959), "deliberate self harm" (Morgan, Burns-Cox, Pocock, and Pottle, 1975), and "Propetia" (Seager, 1978). Kreitman, Philip, Greer, and Bagley (1969) have proffered the term "parasuicide" to describe a deliberate act of self injury, and this term has been adopted by many workers. Others have called for a more systematic categorising of attempted suicide behaviour by the degree of suicidal intent (Beck, Kovacs and Weissman, 1979) or life threatening risk (Worden, 1976). The term "attempted suicide" is used in this research since it continues to be used by many researchers to describe the characteristics of patients who deliberately injure themselves. However suicidal intent is not assumed by the term.

The fact that suicidal behaviour is stigmatised has been noted by Frederick (1971). This has lead to inaccuracies in suicide statistics (Farberow, MacKinnon and Nelson, 1977), with some researchers estimating that suicide figures may be under reported by as much as a half (Seager and Flood, 1965). Reluctance has also been noted by relatives and friends of suicides to participate in research (Miller, 1980).

1.5 Theoretical approaches to suicide prediction

Largely due to the above problems, much of the research on predicting suicidal behaviour has taken an atheoretical path. The difficulties in obtaining data from suicides before they attempt or commit suicide has meant researchers have used easily obtainable demographic and diagnostic data from the suicide patient's past records. Large long term studies of at-risk groups measuring psychological variables are scarce. The result has been the development of high risk demographic variables over populations but few psychological variables to help the clinician assessing risk in an individual patient.

The demographic correlates of suicidal behaviour obtained in research so far only give superficial clues to the factors behind suicidal behaviour in individual cases. Why do older males have a higher risk of suicide? or why are young women more likely to attempt? It is only by isolating causal factors in the etiology of suicidal behaviour that research will help the clinician who is assessing risk in individual cases.

Research has shown attempted suicides to suffer from considerable stress in the months before their admission. Recently, self esteem has been identified as a personality variable that may mitigate against the effects of stress (Petrie and Rotheram, 1982). The present study sets out to test whether high self esteem in attempted suicides will insulate the patient from further attempts and thereby be useful as an indicator of further suicide potential.

A consistent finding from studies on suicidal behaviour is that suicidal individuals (both attempters and suicides) are socially isolated, have poor social skills, and future expectations of loneliness. This research sets out to establish if social skills act as buffers against further attempts in a group of attempted suicides, and whether assessment of poor social competence can also act as a valid indicator of suicidal risk. This has direct relevance for intervention with suicidal individuals.

Suicidal behaviour is the end point of a complex group of conditions and as such it is necessary to include a broad range of variables in the predictive equation. As well as looking at self esteem and social skills this research also examines the role of the cognitive variable of hopelessness.

A significant amount of research has concentrated on cognitive factors as indicators of suicidal risk. Beck (1963) views hopelessness - negative expectations of the future - as the mediating variable between depression and suicidal behaviour, and a better predictor of suicide than depression itself. Hopelessness has been implicated as a variable related to suicidal intent but its value as a predictor of suicidal behaviour and ideation has yet to be established.

Various efforts have been made using existing psychological tests (such as the MMPI and TAT) to extract items, scales, profiles or signs predictive of suicidal behaviour. This research effort has been disappointing (Lester, 1970) and instead work has been redirected into constructing special tests for evaluating suicidal risk. These scales

began by quantifying the demographic features from suicides files and have since broadened to include clinical factors. One of the most promising prediction scales, the Zung Index of Potential Suicide (1974), does combine a number of clinical factors into a predictive instrument. This scale has significantly discriminated between groups of attempters and controls in previous research. The predictive validity of the scale is tested in this research.

1.6 Improving risk prediction

Even with the current state of knowledge on base rates it is possible for the clinician to improve suicide risk evaluation. However at present almost all clinical assignment of suicidal risk is conducted at an intuitive level without the direct use of base rates or predictive instruments. This leaves the clinician open to a number of common predictive biases. Research has shown judges assigning risk or the probability of an event occuring to be insensitive to bases rates even when these are well known. Judges pefer to base their decision on the perceived similiarity of the person's characteristics to the type of person being predicted, (Kahneman and Tversky, 1973; Tversky and Kahneman, 1974). Generally human decision-makers are poor at assimilating and intergrating a wide variety of (often contadictory) information. Brown (1970), in a study of suicide lethality judgements, suggests that even judges trained to use a wide variety of factors in their assessment of suicide risk, mostly based their decision on only three; suicide plan, age, and prior suicidal behaviour. Likewise Kaplan, Kottler, and Frances (1982) found the assessment of suicidal risk in a psychiatric clinic was based predominately on only two

factors. These were the strength of suicidal feelings and previous suicidal behaviour. This suggests that a pencil and paper instrument or computational procedure that incorporates a wide range of data would give real help with this complex clinical decision. Greist et al (1973, 1974, 1980) have shown that a computer using data from a clinical interview outperforms clinicians in predicting suicidal behaviour. The importance of Greist's work is not the use of a computer per se but rather it demonstrates the improvements possible with the inclusion and weighting of a variety of risk factors.

1.7 Medical contacts of suicidal individuals

The mental health professional or general medical practitioner is in a unique position to use predictive technology to identify the at risk patient. Barraclough, Bunch, Nelson and Sainsbury (1974) in their survey of 100 suicides found a quarter of the sample had been seeing a psychiatrist and one half of these had visited their psychiatrist in the week before their death. In addition two thirds of the suicides had visited their G.P. in the month before their death, with 40% visiting in the week before their suicide. Similiar figures are reported by Chynoweth, Tongue and Armstrong (1980) who found 44% of suicides visited their doctor in the week before their death. Motto and Greene (1958) found during such visits suicides often complained of psychological stress symptoms such as nervousness, depression and insomnia.

Studies on the medical contacts of attempted suicides follow an identical pattern. About 38% visit their G.P. in the week before the

attempt and 60% in the month before (Adam et al, 1978; Hawton and Blackstock, 1976; Turner, 1982). The most common reasons for consultation involved psychological and social problems. Morgan et al (1975) found 61% of the 368 attempted suicides in his sample had visited their G.P. for "nerves" over the past year compared to 14% in the general population. Research shows female attempters more likely to visit the doctor than males and those that repeat suicide attempts even more so (Turner, 1982). At their pre-attempt medical consultation attempted suicides are often prescribed the psychotropic drugs used later for their overdose. Hawton and Catalan (1982) make the point that the prescription of drugs at this time may inadvertently reinforce the idea that taking pills is a legitimate way to deal with their problems.

While these figures show there are certainly opportunities to use predictive techniques, doubt has been expressed about the ability of the G.P. to recognise suicide potential (Golden, 1978). Rockwell and O'Brien (1973) in an American survey of practicing G.P's noted only 14% were able to identify the age range most at risk of suicide, and 18% the most common method of suicide. Often doctors are hesitant and uncomfortable asking patients about suicidal ideation (Steel, 1974). Unsympathetic attitudes have been noted in doctors working in medical wards towards attempted suicide patients. They see the attempter's problems as self-induced in contrast to the patient who is suffering from a genuine disease process (Ghodse, 1978; Ramon, Bancroft, and Skrimshire, 1975)

These figures underline the potential available for improving suicide

prediction among General Practicioners and other mental health workers by providing information on suicidal behaviour and checklists or instruments to aid the rational assignment of suicidal risk.

1.8 Summary and proposal

The incidence of attempted suicide has increased rapidly in New Zealand over the past twenty years. The attempter admitted to a N. Z. hospital is most likely to be a young woman in her early twenties. Most attempters are brought into hospital after they have taken an overdose of prescribed drugs during a period of interpersonal difficulty. Having attempted suicide the patient has a high risk of making a further attempt, and also eventually dying by suicide.

Work to date on identifying predictors of suicidal behaviour has taken an atheoretical path concentrating on demographic factors related to further behaviour. While these identify populations at risk, they do not directly help the clinician assessing risk in an individual patient. For the clinician making this difficult judgement, it is the psychological factors preceeding suicidal behaviour that are crucial for assigning immediate, or longer term suicidal risk. To date, studies using both psychological factors as independent variables and a follow-up methodology are rare in the literature.

This research tests a model of suicidal behaviour that stresses the role of positive personality factors that may help insulate the attempter from further suicidal behaviour. The role of self esteem, social skills, and the cognitive variable hopelessness in the

development of suicidal behaviour is examined.

CHAPTER TWO

DEPRESSION AND COGNITIVE CORRELATES OF SUICIDAL BEHAVIOUR

Depression has long been recognised as the emotional basis of suicidal behaviour. The exact nature of this relationship and the mechanisms operating are still the subject of debate and study. Depression is a widespread clinical syndrome; in fact it has been called "the common cold of psychopathology" (Seligman, 1973, p. 43). The lifetime risk for depression in the general population has been estimated as 10-15%, with higher figures for women (Rush and Fulton, 1982). The depressive syndrome is essentially a mood disorder, characterised by a central feeling of sadness. Generally this is accompanied by a passivity and loss of interest in usual activities, slowed movements or agitation, difficulty in concentration, low self esteem, and inappropriate guilt feelings. Often somatic changes such as loss of libido, poor appetite, and sleeping difficulties also appear.

Evidence of a close association between depression and suicidal behaviour comes from three sources. The first are the diagnoses given to attempted suicides' when they are seen in hospital. The second are the diagnoses of completed suicide patients, either taken from previous medical records (a priori research) or based on information from the suicides associates (ex post facto studies). The third source is follow-up studies of psychiatric patients in different diagnostic categories.

2.1 Depression in attempted suicides

Depression is clearly implicated as a precursor in studies of attempted suicide patients. The percentage of attempted suicide patients receiving depressive diagnoses varies in most studies from 35 to 80% (Weissman, 1974).

In an early study Batchelor and Napier (1954) found 56% of 200 consecutive attempted suicides admitted to a Scottish general hospital were diagnosed as depressives. In another Scottish study, notable for its use of a standardised depression questionnaire (the Zung Self-Rating Depression Scale), Birtchnell and Alacron (1971) found the mean score of 68 attempted suicide patients was not significantly different from a group of depressed patients before ECT.

Similiarly, Silver (1971) tested 45 attempted suicide patients with the Beck Depression Inventory (BDI). The sample of attempted suicide patients scored significantly higher than a control group of psychiatric inpatients. Silver found 80% of the attempted suicides fell within the depressive range of the BDI. Silver concluded; "This finding suggests that regardless of primary diagnosis the suicidal patient is likely to be clinically depressed at the time of his attempt and that depression seems to be common to patients who attempt suicide in each of the nosological categories" (p. 575). Other research conducted with attempted suicides admitted to general hospitals confirm depression to be the most common diagnosis in Australian (Edwards and Whitelock, 1968), English (Morgan et al, 1975), and American (Bogard, 1970; Kiev, 1974) surveys.

2.2 Depression and suicidal death

It is more difficult to establish the psychological condition of suicides before they kill themselves. To enable a diagnosis to be pieced together the researcher may interview close friends and relatives. This ex post facto approach has also confirmed the importance of depression in the presuicidal condition. Robins, Murphy, Wilkinson, Gassner, and Keyes (1959) gathered data from close friends and relatives of 134 suicides. Information from this structured interview was used by two independent psychiatrists to diagnose the patients psychiatric condition before taking their life. Robins et al. found 45% of the suicides received a clear manic depressive diagnosis. Using a similiar procedure with 100 English suicides, Barraclough et al (1974) found the principal diagnosis to be depression in 70% of the cases. More recently, Chynoweth et al (1980) interviewed the surviving friends and relatives of 135 Brisbane suicides. Using depressive criteria from the British Medical Research Council Drug Trail Subcommittee, a depressive disorder was found in 55% of the suicides. Maris (1981) completed a major study of suicide patients, attempted suicides and natural deaths. On the reports of survivors, he found 45% of suicides were moderately to severely depressed before their death.

Ex post facto studies of suicides reported here then show 45 to 70% of suicides to be depressed before taking their life. Studies using this methodology are likely to be overestimations because of probable biases. Firstly, relatives or friends knowing someone who has just taken his or her life will attribute a great deal of pathology to that

person's presuicidal condition. This exaggeration may be reduced by sticking to rigid criteria such as physical symptoms (Chynoweth et al, 1980), but not eliminated.

Secondly, clinicians diagnosing suicidal patients could be more likely to generate depressive diagnoses. Rushing (1968), in a review of studies using an ex post facto approach, found mental illness diagnosed in 50 to 100% of suicides. However, studies using a priori diagnosis obtained from official documents or hospital records found mental illness varied from about 12 to 36%.

Flood and Seager (1968), using a priori diagnosis, traced 325 suicides in the Bristol area. Of this number, mental illness was mentioned in the coroners records in 30% of the cases. Medical records were found in the Bristol area for three quarters of these cases, 79% of which had neurotic or psychotic depressive diagnoses. Similiar figures were found in the English county of Southend-on-Sea (Robin, Brooke and Freeman-Browne, 1968). Twenty nine percent of all suicides in the county had psychiatric records with the primary diagnosis of depression given in 74% of these cases.

Kraft and Babigian (1976) studying 179 consecutive suicides in a New York county found evidence of psychiatric contacts in half of these. Thirty three percent of the records revealed psychiatric diagnoses of either affective psychosis or depressive neurosis. Twenty two percent were diagnosed as schizophrenic and 13% had personality disorders.

While ex post facto studies may overestimate the level of depression,

research using a priori diagnosis tends to underestimate the incidence. This is because previous psychiatric diagnosis does not get at the suicide's condition immediately prior to taking his life. It is also almost impossible to trace every suicide's past medical and psychiatric history. Whether using ex post facto or an a priori methodology, the above studies show depression to be the most frequent clinical syndrome preceeding completed suicide.

2.3 Suicide rates in psychiatric disorders

Mortality figures of depressed patients also show up the intimacy of the suicide-depression relationship. Temoche, Pugh and MacMahon (1964) reported suicide rates in the diagnostic categories of previously institutionalised psychiatric patients. Their results showed the suicide rate for those diagnosed as depressive psychosis was 36 times higher than the general population. The next highest rate (psychoneurosis) was 18 times higher than the general population. Pokorny (1964) in a similiar study of psychiatric patients from a Veterans Administration Hospital found the suicide rate for depressives to be 566 per 100,000. This was 3.4 times higher than the average for all psychiatric patients and 25 times higher than expected of the Veteran population.

Both the Pokorny and Temoche research show the danger period for committing suicide is soon after the patient leaves hospital. Pokorny, using a follow-up period of 0 to 15 years, found 65% of the psychiatric patient suicides occured within the first 8 months after hospital release. Temoche et al examined the Massachusetts suicide statistics

for the three years 1949 to 1951, identifying those patients who left Massachusetts' psychiatric institutions from 1931 to 1951. They found one third of the suicides occured within six months of leaving and 46% within one year.

Further support for the existence of suicidal tendencies in depressed patients comes from research reported by Crook, Raskin, and Davis (1975), Paykel and Dienelt (1971), and Avery and Winokur (1978). Crook et al. in a study of 308 moderate and severely depressed psychiatric inpatients found 44% had a history of at least one suicide attempt and half this number had made two or more attempts. In a follow-up study of 189 depressed Connecticut patients, Paykel and Dienelt found 12 had made suicide attempts and one had committed suicide after a 10 month period, giving an approximate suicide attempt rate of 10% per year. Avery and Winokur (1978) in a six month follow-up study of depressives found 17 of the 519 patients had made suicide attempts. This included five patients who attempted while in hospital, suggesting an overall yearly rate of about 6%.

There is clearly strong evidence of a link between depression and suicide. The risk of a depressed person engaging in sucidal behaviour is substantial. Guze and Robins (1970) state the risk of a depressive eventually dying by suicide is about 15% whereas the comparable risk for the general population is approximately 1%. However not all depressed, or even severely depressed, persons attempt or commit suicide. The exact mechanisms that link depression to suicidal behaviour have not been squarely addressed by most theorists. One of the few theorists to analyse this relationship, combining theory with

empirical research is Aaron Beck.

2.4 Beck's view of depression

Beck sees depression as a result of systematic errors in the way a person percieves and interpets their enviroment. He characterises depression in terms of a cognitive triad. These three cognitive patterns are the views the depressive holds towards himself, the world and the future (Beck, Rush, Shaw, and Emery, 1979).

The depressed patient sees himself as inadequate, attributing his unpleasant experiences to his own lack of ability. He is generally overcritical of himself and believes he is unable to obtain anything worthwhile or achieve real happiness.

The second component of the cognitive triad is the way the depressed patient views everyday experiences in a negative way, misinterpreting events to cause a gloomy view of life. The world is seen as a hostile place making heavy demands and creating overwhelming obstacles.

The third component of the triad is the patient's negative view of the future, which is seen as dark and offering no relief from present difficulties. Projecting into the future, the depressive sees failure and hardship, with no hope for his condition improving.

The cognitive triad of negative views of the self, the world, and the future are developed and bolstered by cognitive schemata and faulty information processing. The schemata are cognitive patterns that

selectively distort situations to ensure that the systematic misinterpretation of the environment is maintained. The cognitive triad is also held intact by faulty information processing, such as overgeneralisation from an isolated incident, and absolutist thinking - placing all experiences in dichotomous categories.

2.5 Hopelessness and suicidal behaviour

Beck sees one part of the cognitive triad, negative views of the future, as the critical variable in the depression-suicidal behaviour relationship. This component has been labeled hopelessness and has been implicted in several studies of suicidal behaviour. Hopelessness has been defined as a set of negative expectations about the future. To the hopeless person the future looks dark. Nothing appears as if it will turn out right. Suicidal behaviour seems the only way out of a desperate situation.

Beck's view of the role of hopelessness in suicidal behaviour has grown out of work by other theorists such as Kobler and Stotland (1964) and more particularly Farber (1968). Farber clearly identified hope as a primary factor in suicide, he states; "It is when the life outlook is of despairing hopelessness that suicide occurs" (p. 12). Farber saw hope as a function of the relationship between the individual's sense of competence and the strength of the present threat. A rise in hopelessness is caused by a perceived lowering of competence in the face of an increased threat.

Studies have consistently found suicidal intent or the strength of

suicidal desire to be significantly correlated with both hopelessness and depression. However, when hopelessness is held constant, the correlation between depression and suicidal intent falls to non-significant levels. Controlling for depression makes little difference to the strength of the suicidal intent - hopelessness relationship. This suggests hopelessness is the variable linking depression to suicide. This has been supported in studies of attempted suicides (Beck, Kovacs, and Weissman 1975), suicide threateners (Wetzel, 1976), psychiatric inpatients (Wetzel, Marguiles, Davis and Karam, 1980) and drug abusers (Weissman, Beck and Kovacs, 1979). The almost consistent support for Beck's view of hopelessness as a moderator variable between depression and suicidal behaviour is shown in Table 1.

An exception to these findings is a study by Pokorny, Kaplan and Tsai (1975) who found hopelessness not significantly correlated with suicidal intent in a small sample of suicide attempters. Unfortunately this study did not test the relative contribution of depression and hopelessness through a partial correlation analysis.

Other studies do give futher support to Beck's view of hopelessness. Lester and Beck (1975) who investigated the relationship between factor analysed components of the Beck Depression Inventory, hopelessness and suicidal intent. Using a sample of 254 attempted suicide patients they found two components of the depression scale (negative outlook-anhedonia and retardation) did correlate significantly with suicidal intent. However partial correlations with these two factors and suicidal intent, controlling for hopelessness, were

Table 1. Correlations Among Variables in Past Studies of
Hopelessness, Depression and Suicidal Intent.

Study	Sample	N	Hopelessness and Suicidal Intent	Depression and Suicidal Intent	Hopelessness and Depression	Hopelessness and Suicidal Intent Controlling Depression	Depression and Suicidal Intent Controlling Hopelessnes
Minkoff et al (1973)	Suicide Attempters	68	.47*** (GES)	.26* (BDI)	.68***	.41***	-.09
Kovacs et al (1975)	Suicide Attempters	87	.68*** (HS)	.57*** (BDI)	.68***	.49***	.20
Beck et al (1975)	Suicide Attempters	384	.38*** (HS)	.30*** (BDI)	.71***	.24***	.06
Wetzel (1976)	Suicide Attempters	48	.67*** (HS)	.63*** (SDS)	–	.43**	.34*
Wetzel (1976)	Suicide Threatners	56	.52*** (HS)	.40** (SDS)	–	.41**	.20
Weissman et al (1979)	Drug Abusers	86	.47*** (HS)	.39*** (BDI)	.80***	.27**	04
	Non-drug abusers	296	.33*** (HS)	.28*** (BDI)	.66***	.20**	.09
Wetzel et al (1980)	Psychiatric Inpatients	73	.76* (HS)	.36* (MMPI-D)	–	.72*	-.10
Emery et al (1981)	Heroin Addicts	191	.21** (HS)	.09 (BDI)	.45***	–	–

* p = <.05, ** p =<.01, *** p =<.001

non-significant.

Wetzel (1976) tested 154 subjects composed of three groups; suicide attempters, suicide threateners, and psychiatric controls, with the Zung Depression Scale (Zung, 1965), the Hopelessness scale, and the Suicidal Intent Scale. Wetzel reported hopelessness and depression to be significantly greater in suicide attempters and threateners than psychiatric controls. When attempters were ranked by suicidal intent, both hopelessness and depression distinguished between high, medium, and low intent groups. However hopelessness correlated higher with suicidal intent than depression. In a recent British study, Nekanda-Trepka, Bishop and Blackburn (1983) found the Hopelessness Scale significantly negatively correlated with depressed patients' wish to live (r= -.72). A further pessimism index, where the patient rated the likelihood of their areas of concern improving, produced a similiar result. These findings add further support for hopelessness as a key variable in determining the strength of suicidal intent.

As well as being a major factor in suicidal intent, hopelessness has also been implicated in suicidal ideation. Melges and Weisz (1971) studied 15 serious suicide attempters' view of the future. They found increased pessimism about the future was associated with increased suicidal ideation. Likewise Beck, Steer and McElroy (1982) studying factors related to suicidal ideation in alcoholics found hopelessness to be significantly more correlated with suicidal ideation than was depression. A stepwise multiple regression analysis showed the Hopelessness Scale explained 42% of the suicidal ideation variance while depression only added another 1% and the number of previous

suicide attempts, less than 1%.

2.6 Cognitive rigidity in suicidal individuals

Other researchers have also noted a cognitive component to suicidal behaviour. They have argued that suicidal individuals are characterised by rigid thinking particularly under stress. Unable to conceive of alternative solutions to their problems, they see suicide as the only way out. Neuringer (1976) has put forward the cognitive rigidity thesis thus; "One can imagine the suicidal person experiencing a continuously narrowing world with fewer and fewer possibilities for relief and change... rigidity and constriction may even make it impossible for him to percieve and contemplate anything other than his rigid state. Death can be seen as an escape from an impossible situation", (p. 240).

Neuringer (1964a) found suicidal patients had significantly higher rigidity scores, as measured by the California F Scale and Rokeach Map Test, than psychosomatic and normal subjects. A further study (Neuringer, 1964b) found that suicidal and psychosomatic patients changed their perceptions of other people more than normal persons do in interpersonal crisis situations. Neuringer proposed this overreactivity may be due to a cognitive organisation that sees the world in extremes. Later work on this question by Neuringer and Lettieri (1971) also found individuals classified as high suicidal risk were more dichotomous in their thinking than less suicidal individuals. This thinking pattern did not decrease over time but seemed to be a permanent characteristic of suicidal individuals.

Levenson (1974), using the Unusual Uses Test as a measure of divergent thinking, found suicide attempters were more convergent in their thinking than psychiatric and control subjects. This was later replicated by Patsiokas Clum and Patsiokas (1979).

There is support for the idea that suicidal individuals are characterised by a rigid cognitive structure. However a major methodological flaw in the research done so far in this area is the lack of control for the depressed condition of suicidal patients. Given that depression is the syndrome most frequently preceeding suicidal behaviour, the rigidity shown by suicidal individuals in these studies could well have been due to their depressed condition. A more suitable control group than psychiatric patients or normals would be a group of depressed patients. This is particularly important considering the structural errors of thinking and faulty information processing that Beck sees are an inherent part of the depressed person's condition.

2.7 Summary

Support for the intimate relationship between depression and suicidal behaviour comes from the diagnoses of both attempted suicides and suicides as well as follow-up studies of psychiatric patients. Beck views depression in terms of a cognitive triad, with one part of the triad, negative views of the future, as a moderator variable between depression and suicidal behaviour. Support for the role of hopelessness comes from a number of studies on suicidal intent and ideation. In the present research the role of hopelessness as a

predictor of further suicidal behaviour is examined.

Cognitive rigidity also has been identified as a possible etiological factor in suicidal behaviour. This finding may be an artifact of the attempted suicide patient's depressed condition. Rigidity is expected in the present study to be related more to depression level and not to predict further suicidal behaviour.

CHAPTER THREE

SOCIAL SKILLS AND SUICIDAL BEHAVIOUR

A powerful theme in suicide research is the social and physical isolation of suicidal individuals. Many are thrust into isolation through widowhood or unemployment, others seem unable to obtain satisfaction from relationships with other people. Loneliness and depression are often the painful result. It has been shown in the previous chapter that depression is the clinical syndrome most likely to preceed suicidal behaviour. By isolating social factors related to depression we may be able to identify some potential indicators of future depression and suicidal behaviour.

Lewinsohn's (1974) theory of depression has direct relevance to this social aspect of suicidal behaviour. Lewinsohn has proposed a behavioural theory of depression that stresses a low rate of positive reinforcement as the critical variable in the development of depression. The depressed person's normal behaviour is seen as not being reinforced enough to be maintained. This leads to increased passivity and depressed affect. Behaviours the person found previously reinforcing as well as rewards decrease in a vicious cycle. An example is depression following the death of a spouse. Behaviours previously socially reinforced (by the spouse) are now not. As these positive behaviours decrease, the individual becomes passive and depressed.

According to Lewinsohn, a low rate of positive reinforcement can be caused by two conditions. Firstly the events or activities the individual finds potentially reinforcing are not available in their

environment. Secondly, the individual may not have the social skills necessary to extract reinforcement from the environment.

3.1 Social isolation and suicidal behaviour

Let us consider how Lewinsohn's first important factor - few reinforcers available in the person's immediate environment - is related to suicidal individuals. Generally the more physically and socially isolated an individual is, the less opportunities there are to obtain rewarding social interactions. Ever since Durkheim's classic "Le Suicide", published in 1897, suicidologists have been sensitive to a link between social isolation and suicidal behaviour. Much of the psychological research on suicide has concentrated on Durkheim's category of "egoistic suicide", which results from a lack of integration between the individual and other members of society. Social isolation has been demonstrated to be a factor in suicide both in terms of living conditions (such as occupation of single rooms in boarding houses) and social relationships (after divorce or spouse's death).

Sainsbury (1955) in an extensive study of London suicides found social isolation to be significantly correlated with suicide. Sainsbury studied the social characteristics of London boroughs and their suicide rates. He also analysed information relating to 409 suicides reported to the North London coroner during the years 1936-1938. Sainsbury found the highest rates of suicide came from boroughs with the greatest concentration of people living alone in one room boarding houses. These boroughs also had high rates of divorce and illegitamacy.

Sainsbury summarises his findings; "These findings support the view that the lonely mode of life is an important adverse factor accounting for the differential rates of suicides in the boroughs and their sub-districts. Social isolation also provides a consistent explanation of the high incidence of suicide found in a wide variety of social groups; the aged, the unemployed, divorced and among immigrants" (p. 91). Likewise Maris (1969), in a study of communities in an Illinios county, found a significant negative correlation (-.72) between the number of people per household and the suicide rate. This relationship held even after controlling for age (-.60).

Both Maris and Sainsbury's studies, based on population statistics, are suggestive of a link between socially isolated living conditions and suicidal behaviour on a community level. However the effect of isolation on the individual can be more exactly studied on the psychological level - through research on suicides and attempters.

In a study of 52 potentially lethal attempters, Greer and Lee (1967) noted 17% of these lived entirely alone in the six months before their attempt. Social isolation was also correlated with psychiatric symptoms and poor interpersonal relations in a follow-up period of one to four and a half years.

Los Angeles suicides follow a similiar pattern according to Shneidman and Farberow (1961). They report 20% of females and 22% of male suicides living alone at the time of their death.

Barraclough and Pallis (1975) in a comparative study of 64 suicides and

128 depressives found 42% of the suicides to be living alone, six times as many as the depressed patients. Likewise Slater and Depue (1981) found significantly more attempters living alone or without another adult in the house than a control group of depressives. Their results suggest social support may act as a buffer against threatening events and reduce the risk of suicidal behaviour. This finding is consistent with current reseach on the positive function of social support in promoting mental health (e.g. Cobb, 1976; Greenblatt, Becerra, and Serafetinides, 1982). As well as providing the opportunity to form social relationships, other people may also identify suicidal conditions and offer help (Linehan, 1981a).

Paykel, Myers, Lindenthal and Tanner (1974) in a general population survey found suicidal ideation was significantly related to social isolation. Subjects reporting suicidal ideation had fewer neighbours who were close friends and fewer neighbours they visited. They also visited friends less and had fewer friends visit them than subjects reporting no suicidal ideation.

Social isolation is a condition closely related to a number of other variables such as unemployment, old age, alcoholism, and marital status. This makes the relationship between social isolation and suicidal behaviour difficult to interpret directly. For instance marital statistics consistently show married persons to be at a lower risk of suicide than those that have had their marriage disrupted by divorce or widowhood (Brown and Sheran, 1972). There is also evidence to show alcoholics commit suicide disproportionately to their number in the population (Rushing, 1968).

Generally then social isolation has been shown to be an important factor in suicidal behaviour. The availability of other people in the individual's environment to give meaningful social interaction seems to act as insulation against suicidal acts. However, the availability of others is not always enough. Lewinsohn's second point in the development of depression concerns the ability of the person to extract rewarding experiences from his dealings with others, in short, the importance of social skills.

3.2 Social skills and suicidal behaviour

Along with research showing suicidal individuals to be socially and physically isolated there is considerable evidence that they are also lacking in social skills. In fact their interactions with other people often have a negative quality.

Fawcett, Leff and Bunney (1969) in a study of attempted suicide patients found the seriously suicidal patient to be distinguished by an inability to maintain warm relationships, to accurately express needs to significant others, long standing marriage problems, and the rejection of helpful relationships with staff and others.

In a study of attempted suicide patients among a group of depressed patients, Crook et al (1975) found suicide attempters to be younger, introverted, as well as unfriendly to staff and other patients. Attempters generally made no effort to socialize in the ward. Flood and Seager (1968) also found psychiatric patients who went on to commit suicide were distinguished by stormy relationships with staff.

Weissman, Fox and Klerman (1973) compared 29 depressives with the same number of suicide attempters on demographic factors and social adjustment. Attempters were characterised by greater interpersonal friction with friends and family over the last six months. El-Gaaley (1974) found similiar differences between female groups of depressives and attempted suicides. The suicide attempters were younger and exhibited more social dysfunction measured in terms of unsatisfactory interpersonal relationships, poorer self image and psychological problems.

Maris (1981) used the term "negative interaction" to describe the personal relationships of suicidal individuals. Maris described these relationships as "painful, unpleasant, rejecting and/or isolating" (p. 117). Suicidal individuals have real difficulty obtaining satisfaction from their close relationships. Maris emphasises it is not only social isolation but that the social interaction the suicidal individual does engage in is generally negative.

A New Zealand study testifies to the chaotic state of the suicide attempter's current personal relationships (Adam et al, 1978). Over 80% of the 185 attempted suicides in this reseach reported major difficulties in their personal relationships, with only 4% being optimistic of the success of their current relationship.

Other research shows attempted suicides poor at communicating to others their needs and feelings. An Australian study (Henderson et al, 1977) used cluster analysis to categorise 350 attempted suicide patients. Two of the three typologies that emerged were interpretable. Both of

these groups were characterised by feelings of loneliness and estrangement from others. While the first group was high on depression, the second group, unable to express feelings directly, used their suicide attempt as a form of communication in order to change the behaviour of significant others. In another study Kreitman, Smith and Tan (1970) raise the possibility that the act of attempted suicide as a form of communication may be more frequent among certain socially linked sub-groups in society. They estimated a significant number of the close associates of attempted suicides admitted to an Edinburgh hospital had themselves made suicide attempts.

Farberow and Devries (1967) developed an experimental scale from MMPI items in an attempt to discriminate suicide threateners from non-suicides. The discriminating MMPI items gave Farberow and Devries a clinical picture of the suicide threateners social life; "socially he doesn't mix well, finds it hard to talk to new people, has trouble thinking of the right things to say in a group... he avoids people because they disappoint him and, as a result, feels lonely" (p. 612).

In summary, the depression and loneliness so often characteristic of suicidal patients may be seen through Lewinsohn's theory of depression as a function of both social isolation and the lack of social skills. Compared to the general population the suicidal patient is more likely to live alone and have a disrupted marital life. Poor social skills mean social relationships generally have a negative quality, adding to the ambivalent feelings held towards others and increasing their isolation.

The suicidal patient often has clear similiarities to individuals categorised as lonely in recent literature. Jones, Freeman and Goswick (1981) noted lonely people were characterised by poor social skills and self concept, felt alienated from others and expected others to rate them negatively. Horowitz and de Sales French (1979) reported the major interpersonal problems of lonely subjects centred around inhibited sociability. The most common reported problems concerned problems of social acceptance and a lack of social skills.

A number of studies have reported loneliness as a common motive in suicidal behaviour, for a review see McCulloch and Philip, (1967). Morgan et al, (1975) for example, report 45% of the 368 attempted suicide patients in their study regard themselves as not having a close friend and a third reported feeling lonely at all times. Unfortunately no comparable general population figures were published with this report. Wenz (1977) has noted suicidal subjects experienced greatest loneliness during spring and winter months, these same months had the highest frequency of suicide attempts.

3.3 The social basis of suicidal behaviour

From a theoretical basis it could be argued suicidal behaviour follows a causal chain from poor social skills and socially isolated living conditions, to depression, hopelessness and finally suicidal behaviour. This theoretical position has implications for both assessment of suicide potential and treatment.

By evaluating the level of social skills in a group of attempted

suicides one could determine those most likely to form satisfactory interpersonal relationships once they leave hospital. More important is the identification of those whose level of social skill will continue to bring them into painful and difficult relationships with others. This may prove to be an important indicator of longer term suicidal behaviour.

As well as the potential for assessment of suicidal risk, this model suggests the teaching of effective social skills to high suicidal risk patients may preempt such behaviour. Support for the proposed model is at present weak. Some exploratory research on the level of social skills and effectiveness of assertion training in reducing suicidal behaviour has given conflicting results.

Perlman (1974), using female undergraduates who reported their past suicidal behaviour, divided subjects into suicidal threat, gesture, attempt and control groups. No significant difference was found between the groups on measures of self disclosure and assertiveness.

Bartman (1976) divided 20 suicide attempters into two groups, one of which received individual assertive training while the other group met for group discussions. Measurement at the conclusion of treatment and six weeks later showed a significant reduction in suicidal behaviour in the assertion training group. However no significant differences were found between the groups on the MMPI-D Scale, Fear of Negative Evaluation, and Social Avoidance and Distress Scales.

More recently Linehan (1981b) investigated levels of assertiveness in

three groups of subjects; current attempters (n=12), psychiatric patients with a history of attempted suicide (n=13), and psychiatric patients with no history of attempts (n=12). Results indicated that current and past attempters were less assertive than psychiatric patients with no history of attempted suicide.

Since these studies are based on small samples, and in one case, on the self reported suicidal behaviour of a single sex college sample, their results must be viewed as speculative. However both Bartman's (1976) and Linehan's (1981) research is suggestive of a link between low assertion (a specific social skill) and suicidal behaviour. Given the demonstrated lack of social skills in many attempted suicides this theoretical conception is worthy of more attention as a means of longer term suicidal risk assessment and ultimately a treatment strategy. The present study examines whether good social skills, in terms of high assertion and low social anxiety, will insulate attempted suicides from further suicidal behaviour.

CHAPTER FOUR

STRESS AND SUICIDAL BEHAVIOUR

There is evidence that suicide attempters suffer from more stressful life events than members of the general population. This is evident in the six months prior to their attempt and also after their discharge from hospital. Self esteem is proposed as an insulator against this stress. By evaluating self esteem at the time of the attempt the clinician may be able to establish a measure of longer-term suicidal risk.

4.1 Stress in the lives of attempted suicide

Paykel, Prusoff and Myers (1975) compared suicide attempters, depressed patients and general population controls on life events that had occurred over the previous six months. Suicide attempters differed on the number, type, and pattern of recent events. Attempters reported four times as many life events than the general population and 50% more than depressed patients. On the whole suicide attempters rated more events as undesirable and uncontrollable than the other two groups. Attempters reported about the same number of exit events, such as divorces and deaths, as depressives but significantly more entrance events such as marriage or a new person in the home. This indicates the suicide attempter's field of social interaction is subject to a great deal of change prior to the attempt. The pattern of events over the previous six months showed suicide attempters to have an increasing rate of major life events, while depressives showed a rise in the month before admission and general population controls remained constant.

Overall Paykel et al (1975) concluded there was "a strong and immediate relationship between suicide attempts and life events" (p. 327). In a similiar study, Cochrane and Robertson (1975) found suicide attempters to experience significantly more stressful life events in the year before their attempt than control subjects. While pleasant events were similiar across both groups, attempted suicides experienced significantly more unpleasant events.

Cochrane and Robertson also tested the difference between attempters and controls on the frequency of life events within their influence and life events outside their control. They found attempters to be higher on both types, suggesting the stress in their lives is not only caused by life events they have created for themselves.

Further support for the role of stress prior to attempted suicide comes from research reported by Clum, Patsiokas, and Luscomb (1979). In a follow-up study of attempters they noted patients reattempting over a one year period had a higher rate of life change than non-repeaters. Adam et al (1983) in a further two year follow-up of Christchurch attempted suicides found attempted suicides reported more life events than control subjects over the follow-up period. Isherwood, Adam, and Hornblow (1982) in another New Zealand study compared 150 attempters to 100 drivers involved in accidents and 200 general population control subjects. Life event stress was an important factor in separating the attempted suicide group from drivers and control subjects. By itself, stress correctly classified 87% of the attempted suicides in a discriminant function analysis. Suicide attempters reported more recent undesirable events than both control subjects and drivers. The

above studies show suicide attempters experience more life events associated with stress than control subjects both before the attempt and up to two years afterwards.

4.2 Personality factors as moderator variables

The current conception of stress does not see a necessarily direct relationship between life events and subjective experience of stress or stress related illness. Personality factors and personal support systems have been identified as moderating variables, influencing both the perception and the coping with stressful events. Paykel et al (1975) state "The same events are often experienced by others without any suicidal acts eventuating. It must be the interaction between events and personality, or the manner in which the stress is dealt with, that is ultimately crucial in determining the self-destructive consequence" (p. 333). The relationship between stressful life events and illness is not direct. In a review of this research, Rabkin and Struening (1976) state such correlations are typically low, indicating other factors mediate the effect of external stressful stimuli and the individuals reaction.

Considerable recent work has gone into analysing the ameliorative effect of social support systems on stress (see Cobb, 1976; Schaefer, Coyne and Lazarus 1981, for reviews). However comparatively little work has gone into identifying personality characteristics that provide the individual with insulation against stress.

4.3 Self esteem as a stress insulator

Given that attempted suicides experience a high number of stressful life events, identification of factors that mediate the life event-suicidal behaviour relationship is potentially important. Theoretically, by locating personality variables that insulate the attempted suicide from stress after they leave hospital, one may be able to identify those attempters who are deficit in these characteristics and therefore carry a higher risk of reattempting.

The only study to directly examine mediating variables in the stress-suicidal behaviour relationship was conducted by Luscomb, Clum and Patsiokas (1980). They found locus of control did not differentiate between a sample of male attempters and a control group of psychiatric patients. However they suggested age may be a mediating factor as older attempters experienced more stress than psychiatric control subjects.

Kobasa has produced some important research in identifying personality variables that act as buffers against stressful life events, (Kobasa, 1979; Kobasa, Maddi and Courington, 1981). She has identified a personality factor, labelled "hardiness", as a variable distinguishing executives who show few stress illnesses from those who fall ill. Kobasa has drawn the construct of hardiness from existential personality theorists and sees it as a function of three factors; an internal locus of control system, a strong committment to life activities, and a view that sees life as a challenge. As such this concept has similiar components to self esteem.

Petrie and Rotheram (1982) found self esteem particularly, and to a lesser extent assertion, correlated with low psychological and physical stress symptoms in Los Angeles firefighters. Stress did not vary with length of time on the job, age, rank or other demographic factors. This raises the possibility that these personality attributes may mitigate the effects of high job stress.

There is some theoretical and empirical support for the role of self esteem as a potential stress insulator. In behavioural terms self esteem can be viewed as a covert self-reinforcement strategy. Skinner (1953) argues that individuals control their own behaviour partly by giving rewards to themselves independent of environmental or behavioural actions. A person high in self esteem is resiliant when he or she makes a mistake or faces an environmental threat. They can maintain good feelings about themselves despite negative consequences and thus are somewhat insulated from the effects of stress. Self esteem has been negatively correlated with anxiety in studies by Lipsett (1968) and also Many and Many (1975). Coopersmith (1967, p. 138) found "persons low in self esteem...more anxious and prone to manifest psychosomatic symptoms than are persons of medium to high self esteem". Lazarus (1966, p. 256) also noted "general beliefs about...ones resources for coping will influence how the individual will cope with threat". The role of self esteem may therefore be in giving both a positive attitude with which the individual approaches threats and also protecting the self image from damage in stressful conditions.

4.4 Summary

Research shows suicide attempters to be under considerable stress both before their attempt, and up to two years afterwards. There is some evidence that personality variables act as moderator variables between stressful life events and pathological symptoms in the individual. One personality variable - self esteem - has been identified as a possible insulator against stress and there is some theoretical and empirical support for this approach. The present study examines whether self esteem acts as an efficient insulator against further suicidal behaviour in attempted suicide patients.

CHAPTER FIVE

SCALES FOR PREDICTING SUICIDAL BEHAVIOUR

The potential importance of a psychological test that can accurately identify suicidal individuals cannot be understated. Such a device would have immediate practical utility in general medical practice, mental health centres and hospitals, in fact any setting where mental health professionals are in contact with troubled individuals.

5.1 Previous approaches

There have been two main approaches to the development of a valid suicide prediction scale. Firstly an effort has been made to extract factors indicative of suicidal behaviour from existing psychological tests. Although attempts have been made to distil suicidal signs from responses to the Rorschach (e.g Applebaum and Holsman, 1962), the Bender Gestalt (e.g. Leonard, 1973), the TAT (e.g. Shneidman and Farberow, 1958) and others, most research has concentrated on the MMPI. Researchers have tried to find standard scales (Pallis and Birchnell, 1976), sets of individual items (Farberow and Devries, 1967), and profiles (Devries and Shneidman, 1967) that distinguished suicidal potential. However this work has turned up few significant and replicable findings. Clopton (1979) in a recent review of the MMPI and suicide concludes; "to date neither standard MMPI scales, MMPI profile analysis, nor specific MMPI items have found to be reliable at predicting suicide at useful levels" (p.162). Other standard psychological tests have also failed to produce consistent findings (see reviews by Lester, 1970; Neuringer, 1974) Farberow (1981) in the most recent review of this area states; "Early efforts to use

standard psychological tests to assess or predict suicide have generally been disappointing. There has been essentially no change in this opinion as a result of investigations in the 1970's" (p. 142).

The second approach in the development of a suicide prediction scale has involved the construction of special instruments unique to the suicide prediction task. This has been labelled the "task related" approach by Lester (1970) as opposed to the "test related" method of using existing tests. From the evidence available it is the task related scales that seem to hold the most promise.

These scales may be divided broadly into those predicting suicidal death and those predicting further suicidal behaviour in suicide attempters. Task related suicide prediction scales also differ on the extent they use clinical and demographic information. In general, early scales utilized mainly demographic information (including past diagnoses) readily obtainable from the patient's files. Later scales have incorporated suicide research findings into their scales, relying more on the psychological state of the patient. Scales predicting suicidal death are reviewed first in this chapter, followed by tests predicting further suicidal behaviour in attempted suicides.

5.2 Suicidal death prediction scales

One of the first suicide prediction scales was constructed by Tuckman and Youngman (1968). This scale was designed to predict future suicidal death in attempted suicides. It was based on a search of the cause of death for 3,800 consecutive attempted suicides from Philadelphia police department

Table 2: Scale for Assessing Suicide Risk in Attempted Suicides.
(Tuckman and Youngman, 1968)

Factor	High Risk	Low Risk
Age	Over 45 years	Under 45
Sex	Male	Female
Race	White	Nonwhite
Marital status	Separated,divorced, widowed	Single,married
Living arrangements	Alone	With others
Employment status	Unemployed,retired	Employed
Physical health	Poor	Good
Mental condition	Nervous or mental disorder	Normal
Medical care (within 6 months)	Yes	No
Method	Hanging,firearms, jumping,drowning	Cutting or piercing, gas or carbon monoxide, poison,combination,other
Season	Warm months	Cold months
Time of day	6.00 a.m-5.59 p.m.	6.00 p.m-5.59 a.m.
Where the attempt was made	Own or other's home	Other premises out of doors
Time interval between attempt and discovery	Almost immediate	Later
Self reported intent to kill	No	Yes
Suicide note	Yes	No
Previous attempt or threat	Yes	No

files. The research period, which included samples from an earlier study (Tuckman and Youngman, 1963) stretched from April, 1959 through to Februrary 1966. From the files of 48 attempted suicides who had subsequently killed themselves during the study period, Tuckman and Youngman extracted 17 predominately demographic factors indicative of high suicidal risk. These factors are shown in Table 2.

The predictive validity of Tuckman and Youngman's scale was tested by Resnik and Kendra (1973) on a general psychiatric hospital sample. Their study used information from suicidal patients who killed themselves within the research period. The results conflicted with Tuckman and Youngman as increased scale scores were associated with a decreasing suicide rate rather than the expected increase. Only seven of Tuckman and Youngman's original factors were found to be consistent with high suicidal risk in the psychiatric sample. These were; age 45 or older, male, unemployed, poor emotional condition, the methods of hanging, jumping or drowning, attempt during warm months, and self reported suicidal intent.

In an attempt to aid assessment of suicidal risk in psychiatric patients Dean, Miskimins, De Cook and Wilson (1967) developed a scale for use in a psychiatric hospital. Matching 17 patients who had committed suicide with control subjects for age, sex, marital status and diagnosis, the researchers took discriminating items from routine mental status and admission forms. The resultant test was named the Suicide Potential Scale and is shown in Table 3. It consists of 26 items with four levels of responses. The mean score of the suicidal group was significantly different from the control subjects and from a random sample of psychiatric patients. Further validation was provided by the researchers

Factor	Score 3	Score 2	Score 1	Score 0
15. Anger*		Not severe		Moderate, Severe,DK
16. Depression*	Severe	Moderate		Not severe DK
17. Apathy*		Severe	Moderate	Not severe DK
18. General attitude			Friendly, negative	Suspicious DK
19. Inappropriate behaviour*		No		Yes,DK
20. Movement against people*	Not severe			Predomin. some,DK
21. Hostility	Not severe			Moderate, severe,DK
22. Impaired effectiveness*		Not severe moderate		Severe,DK
23. Attitude towards the examiner		Cooperative		Uncooperat. variable,DK
24. Denial			Not severe	Moderate, severe,DK
25. External precipitating stress*		Moderate severe		Undetermin. none,mild
26. Danger to self (check severe column twice)	Severe	Moderate		Not severe, DK

* Included in Revised Suicide Potential Scale- Miskimins and Wilson (1969)

Score	Suicide Risk
0 - 24	Low
25 - 32	Moderate
33 - 60	High

obtaining scale scores from 24 patients rated by psychiatric staff as high suicidal risk cases. This high risk group's mean score was significantly higher than a random sample of psychiatric patients.

A cross validation of the Suicide Potential Scale was undertaken by Miskimins and Wilson (1969). Scores on the scale from a further 15 patients who had committed suicide were compared with a random sample of 30 psychiatric patients. An item analysis resulted in the elimination of 10 of the least discriminating items (see Table 3).

Braucht and Wilson (1970) investigated the predictive validity of the Revised Suicide Potential Scale using part of the data base the scale was derived from. They report the Revised Suicide Potential Scale significantly discriminated between groups of 95 non-suicidal controls, 324 suicide attempters, and 63 suicides.

Probably the most ambitious project in the development of a suicidal death prediction scale was undertaken by Jerome Motto. In 1969 he embarked on a major follow-up study of depressed and suicidal patients admitted to nine San Francisco mental health institutions. From 1969 to 1975 2,753 subjects between the ages of 18 and 70 were evaluated on 162 demographic, social, and psychological factors. Searches were then made of the Californian Death Register to identify subjects who had died during the two years following their discharge from the psychiatric facility. From the original sample, 136 subjects had committed suicide based on coroner's records, death certificates, information from clinical sources and family members. This represented 4.47% of the original sample or a suicide rate of 2.47% per annum.

Table 4; The Suicide Risk Assessment Scale
(Motto 1982)

Factor	Response category	Assigned score
1. Age last birthday	20	6
	30	32
	40	53
	50	72
	60	90
	70	106
2. Type of occupation	Executive	48
	Administrator	48
	Professional	48
	Owner of business	48
	Semiskilled worker	48
	Other	0
3. Sexual orientation	Bisexual and sexually active	65
	Homosexual, not sexually active	65
	Other	0
4. Financial resources	Negative(in debt)	0
	None	0
	0-$100	35
	Over $100	70
5. Threat of significant financial loss	Yes	63
	No	0
6. Stress unique to subject's circumstances, other than loss of finances or relationship, threat of prosecution, illegitimate pregnancy, substance abuse or poor health.	Severe	63
	Other	0
7. Hours of sleep per night (approximate nearest whole hour)	0-2	0
	3-5	37
	6 or more	74
8. Approximate change of weight during present episode of stress	No change	0
	10% or more weight loss	0
	Less than 10% loss	60
	Weight gain	60
9. Ideas of persecution or reference	Moderate or severe	45
	Other	0

Factor	Response category	Assigned score
10. Intensity of present suicidal impulses	Questionable,moderate,or severe Other	45 0
11. If current suicide attempt made,seriousness of intent to die	Unequivocal Ambivalent,weighted toward suicide Other or not applicable	88 88 0
12. Number of prior psychiatric hospitalisations	None 1 2 3 or more	0 21 43 64
13. Result of prior efforts to obtain help	No prior efforts Some degree of help Poor,unsatisfactory, or variable outcome	0 0 55
14. Emotional disorder in family history	Depression Alcoholism Other	45 45 0
15. Interviewer's reaction to the person	Highly positive Moderate or slightly positive Neutral or negative	0 42 85

Table of Risk

Total Score	Relative Risk	Approximate Suicide Rate
000-271	Very low	Less than 1%
272-344	Low	1% -2.5%
345-465	Moderate	2.5%-5%
466-553	High	5% -10%
554+	Very high	10 -20%

The results of Motto's study have only recently been transformed into a pencil and paper suicide prediction instrument (Motto, 1982). The scale contains 15 factors which are weighted and summed to produce an estimated suicide rate ranging from less than 1% through to 10-20%. Motto's scale is shown in Table 4 and will no doubt provoke further research.

A British effort to develop a suicidal death prediction scale for use with suicide attempters has only just been published. Unlike the follow-up methodology used to identify risk factors in Motto's study, this project is based on the approach that the more closely a suicide attempter's characteristics resemble those of known suicides, the greater the risk. To this end, Pallis, Barraclough, Levey, Jenkins, and Sainsbury (1982) collected clinical and demographic data from 151 attempters and 75 suicides. Discriminant analysis was then used to extract the variables that most accurately discriminated between the two groups. These variables, with appropriate weightings have since been incorporated into a long and short form scale (Pallis, Gibbons, and Pierce, in press). The authors recommend the use of the Post Attempt Risk Assessment (PARA) Suicide Scales in combination with a modified form of Beck's Suicidal Intent Scale (Beck et al, 1974). A high score on both the PARA Suicide Scale and the Intent Scale is associated with increased suicide risk. So far no further studies have cross-validated the PARA Scales. The PARA Suicide Scale appear in Table 5. Pallis (1983) recommends the longer version be only used for research purposes until more validating data is available.

As research into suicide prediction scales has developed, the hope that such scales would be universally applicable has faded. This is partly

Table 5; Post Attempt Release Assessment Scales
(Pallis, 1983)

Factor	Category	Weight
Short Scale		
1. Age	Up to 44	0.12
	45+	5.00
2. Sex	Male	6.41
	Female	5.00
3. Social Class	Upper	6.64
	Lower	5.00
4. Work Status	Employed	2.65
	Retired	2.40
	Other	5.00
5. Living Arrangements	Alone	5.84
	Not Alone	5.00
6. Suicidal Communication in the Last Year	Yes	7.50
	No	5.00
Long Scale		
1. Sex	Male	7.25
	Female	5.00
2. Age	45+	5.00
	Up to 44	0.67
3. Times Married	Twice or more	3.58
	Once or never	5.00
4. Work Status	Retired	0.42
	Employed	2.50
	Unemployed	3.50
	Other	5.00
5. Living Arrangements	Alone	6.50
	Not Alone	5.00
6. Social Class	Upper	8.58
	Lower	5.00
7. Excess Drinking in Parents	Yes	3.25
	No	5.00
8. Family History of Psychiatric Treatment	Yes	6.75
	No	5.00
Life Events Within Last Year;		
9. Admission to a Psychiatric Hospital	Yes	3.17
	No	5.00
10. Reduction in Income	Yes	3.17
	No	5.00
11. Breaking off from Spouse or Lover	Yes	4.00
	No	5.00
12. Suicidal Communication in the Last Year	Yes	8.00
	No	5.00
13. Taking Hypnotics for One Year or More	Yes	6.25
	No	5.00

Factor	Category	Weight
14. "Row" Within the	Yes	3.75
Last 48 Hours	No	5.00

Reported Symptoms Within the Last Month;

Factor	Category	Weight
15. Behavioural	Yes	9.16
Retardation	No	5.00
16. Loss of Energy	Yes	1.75
or Fatigue	No	5.00
17. Irritability	Yes	0.83
or Anger	No	5.00
18. Length of Current	One Year+	7.67
Episode of Illness	Less than One Year	5.00

Suicide Risk Level	Short Scale Score	Long Scale Score
Low	- 26.49	- 82.99
Medium	- 28.49	- 84.99
High	- 30.49	- 86.99
Extremely High	30.50+	87.00+

because our knowledge about the clinical conditions and factors conducive to suicidal behaviour has lagged behind the demographic identification of those people at risk. This has two important consequences. Firstly, suicide prediction scales often lose discrimination when used beyond the population they were developed in. Secondly, predictive accuracy can often be improved by validation of the scale on sub-populations (divided by age, sex, syndrome etc) rather than using the scales with the general population as a whole. Lester (1974) comments; "...the compostion by sex etc of the population may affect the kind of instrument needed for the assessment of suicidal risk. Too often, suicidologists talk as if there is one general all purpose predictor. There is not and there may never be" (p.80). The idea of identifying sub-groups to which suicidal death prediction scales can be applied has been put into practice by Wold

(1971), Motto (1977) and Lettieri (1974).

Wold (1971), in a survey of 500 Los Angeles Suicide Prevention Centre cases, developed 10 tentative categories of suicidal clients. These sub-groupings included categories such as discarded men, old and alone, and middle-aged depression. It was hoped these sub-groupings would form the basis of validated syndromes - aiding suicide prediction by enabling the clinician to fit the patient into a specific category with known risk factors. However these sub-groupings have not been used in later research with suicide prediction scales.

During the development of his suicide prediction scale, Motto (1977) divided part of his large sample into two subgroupings. The first group, the "alienated", contained subjects who had low self esteem, a long history of suicidal ideation and felt unconnected to others. The second group called "stable with forced change" had a history of a stable life pattern but confronted a need to adjust to a major life change. For the "alienated" group Motto found 20 variables that significantly distinguished between suicides and non-suicides. For the "stable with forced change" sub-group 12 items distinguished between the suicide and non-suicide groups. There were only 4 discriminating items common to both groups. This research supports the idea that the accuracy of suicide prediction scales may be improved by their application to sub-groups within the population.

This has been further developed by Lettieri (1974) who formulated his Suicidal Death Prediction Scales for use with four sub-populations depending on the subject's age (above or below 40) and their sex.

Lettieri developed his scales from 617 suicide prevention centre callers, discriminating between the 52 who later killed themselves, and the 465 who had not. After generating a number of possible predictive factors, Lettieri performed four stepwise discriminant function analyses according to the age and sex of the subjects. Discriminating items were sorted into four seperate scales. Each of the four scales; younger male, older male, younger female , older female, have both a long and a short form. The short forms contain only the most powerful predictive factors.

Lettieri's scales have direct relevance for suicide prevention centre counsellors where often only limited information about the individual is available and suicide potential must be quickly evaluated. Unfortunately supporting validation on the scales have not been published.

While Lettieri's scales were developed for general sub-populations, other scales have been constructed for evaluating suicide risk in specific populations. Farberow and MacKinnon (1974) have developed a suicide prediction scale for use with neuropsychiatric hospital patients as an aid for evaluating suicide risk at release. They used 15 items from an 81 item pool that distinguished between a group of neuropsychiatric patients (n = 93) that had committed suicide within two years of leaving hospital and another random control group of discharged patients (n = 94) that had not. Further validation of the scale resulted in the dropping of four items. The final 11 item scale was found to be as accurate as the longer scales and to produce the least number of false positives. Their test, presented in Table 6, shares common features with other scales. Depression, hopelessness, divorce and previous suicidal behaviour receive high weightings as in other scales while a higher age signifies a lower

Table 6; The Neuropsychiatric Hospital Suicide Prediction Schedule

(Farberow and MacKinnon, 1974)

Item	Scores	Weight
1. Was the subject depressed most of the time while in hospital?	No Slightly	11.00 17.32 23.64 29.96
2. The subject had shown life-long inability, limited or ability to maintain warm, mutually interdependent relationships?	Inability Limited Good	9.06 7.12 5.18
3. During his most recent hospitalisaton, did the subject have any hope that things would be better for him?	Yes Slightly hopeless Mod. hopeless Severely hopeless No hope despite opportunities	11.0 15.91 20.82 25.73 30.64
4. Were somatic problems,such as disturbed appetite,sleep disorders,or excessive fatigue significant symptoms leading to the subjects last hospitalisation?	No problem Slight problem Moderate problem Severe problem Delusional	11.0 15.91 8.0 6.5 5.0
5. The subject's age at final release	25 26-30 31-35 36-40 41-45 46-50 51-55 56-60 61-65 65-	11.0 10.0 9.0 8.0 7.0 6.0 5.0 4.0 3.0 2.0
6. During or after the current hospialisation, was the subject ever under the infuence of either drugs or alcohol?	No Yes	11.0 0.87
7. During or after the last hospitalisation,did the subject ever return unusually early to the hospital from either passes or leaves?	No Yes	11.0 20.72
8. Did the subject ever elope during either his previous or current hospitalisations?	No Previously Currently Both	11.0 13.33 15.66 17.99

Item	Scores	Weight
9. During or after the current hospitalisation did the subject experience an actual divorce from his wife?	No Yes	11.0 22.43
10. Did the subject have a history of suicidal behaviour of any kind?	No Once Twice three or more	11.0 13.13 15.26 17.39
11. Either just before or during the subject's most recent hospitalisation, has the subject been more nervous, ,anxious or agitated than usual?	No Yes	8.15 5.30

High risk= 189.36-130	Moderately high= 129.99-117.45
Moderately low= 129.99-117.45	Low= 107.66-84.35

risk which conflicts with other instruments. A later study on another sample showed the overall accuracy of the scale as 81% in classifying patients as high, moderately high, moderately low, and low suicidal death risk. While the classification was better than expected, the authors suggest the level of prediction is still not high enough to use in individual clinical applications.

The predominant approach in developing scales to predict suicidal death has been has been to extract from hospital files, items that distinguish suicide patients from non-suicides. These items mostly reflect the demographic profile of the completed suicides. Common factors are; over 45 years, male, prior hospitalisation, unemployed, divorced or seperated marital status. A major difficulty with these scales is that there is very little cross validation done on the scale variables and very few scales have had their predictive validity tested. Where cross-validation

has been attempted (e.g. Resnik and Kendra, 1973) the results show the scales to lose predictive power outside of the population they were developed in. The application of these scales to sub-populations seems to hold some promise for improving prediction, but cross-validation of sub-groups is lacking.

5.3 Predicting further suicidal behaviour in attempted suicides

While most of the scales discussed previously have used suicidal death as the predictive criterion other scales have been developed for predicting further suicidal behaviour (including both attempts and completed suicide) in attempted suicides.

Buglass and McCulloch (1970) developed suicide prediction scales from the characteristics of attempted suicide repeaters in the Edinburgh Poisoning Treatment Centre. Of 511 patients in the initial sample, 25% were readmitted to the same institution for another suicide attempt and 3.3% committed suicide, within three years. The seven item female scale comprised of a previous suicide attempt, previous psychiatric treatment, psychopathy, drug addiction, frequent changes in accommodation, father absent (through death or separation) before the patient was 10, and also the mother absent before 10 years. The male scale consisted of only three items; alcoholism, alcohol at the time of attempt and violence in one of the patients key relationships. The two scales were validated against a subsequent cohort. The female scale showed good predictive validity, with 46% of those patients scoring in the high risk group reattempting suicide. The male scale however lost predictive power.

The work on a predictive scale for attempted suicides begun by Buglass and McCulloch (1970) was extended by Buglass and Horton (1974a). They designed a six item suicide prediction scale using data from patients readmitted to the hospital within one year of a previous attempt. The scale, for use with both males and females, contains six items; sociopathy, problems in the use of alcohol, previous inpatient psychiatric treatment, previous outpatient psychiatric treatment, previous suicide attempt resulting in hospital admission, and not living with a relative.

For the initial sample a score of zero gave a probability of reattempting of 5%, a score of three gave a probability of 27% and with a score of five or six probability rose to 48%. Further validation on patients admitted in the next two years gave similar percentages with some loss of predictive power in the five or six range due to variability in male patients.

Buglass and Horton's scale was cross-validated on two Italian samples by Garzotto, Siani, Zimmermann-Tansella, and Tansella (1976) and Siani, Garzotto, Zimmerman Tansella, and Tansella (1979). They found that although overall discriminatory power was reduced, the scale still significantly distinguished between groups of repeaters and non-repeaters over a 12 month period. Four new items were found to discriminate in the Italian sample; previous parasuicide not admitted to hospital, history of suffering violence, alcohol at the time of act, and less than one year at the present address.

Cohen, Motto and Seiden (1966) made an early effort to construct a suicide prediction scale for attempted suicides based on Tuckman and Youngman's

Table 7; An Instrument for Evaluating Suicide Potential

(Cohen et al, 1966)

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1. Is this person a male?

2. Is this person Caucasian?

3. Is this person 45 years of age or older?

4. Is this person seperated, divorced or widowed?

5. Does this person live in the transitional area surrounding the central downtown section?

6. Did this person currently attempt suicide by oral ingestion, shooting or jumping from a high place?

7. Was this person unconscious or unable to answer questions coherently as a result of the self destructive act?

8. Did this person have a previous hospitalisation?

9. Did this person make a previous suicide attempt?

10. Was this person in poor physical health in the past 6 months?

11. Does this person now have or has he ever had a problem with alcohol?

12. Does this person now have or has he ever had a problem with drug addiction?

13. Does this person now have or has he ever had a problem with anti-social behaviour?

14. Has this person suffered a loss-real,threatened or fantasized within the past 6 months?

(1963) work. Cohen et al followed 193 attempted suicides over five to eight years to identify those making further attempts or committing suicide. Using demographic factors from a Mental Health Clinic questionnaire, Cohen et al extracted 14 items that discriminated between high and low risk suicidal patients. These factors partially agree with

Tuckman and Youngman's (1968) findings as regards sex, race, age, previous suicide attempt, and poor physical health. However they conflict on employment status, living arrangement, and the leaving of a suicide note. The Cohen et al scale is presented in Table 7.

While Farberow and MacKinnon (1974) developed a scale to predict suicidal death in a sub-population of neuropsychiatric patients, Hoiberg and Garfien (1976) have developed a scale to identify Naval recruits likely to attempt suicide. Hoiberg and Garfein extracted 21 items from a psychiatric screening test used by the U.S. Navy. The items which measure mainly a generalised anxiety reaction are shown in Table 8. The mean scale score of 246 suicide attempters was significantly different from 246 controls on the scale. With a cut off score of 15 or more 53% of the suicide attempters were correctly identified with 8% false positives. False positive reduce to less than one percent at a score of 19 but only 17% of the attempted suicides were identified.

One of the most sophisticated attempts at a suicide prediction scale for suicide attempters to date is that of Zung (1974). Written in two sections, demographic and clinical, it is the clinical instrument that has proven to be the most accurate in classifying suicidal and non-suicidal groups. The clinical scale is comprised of a large number of factors found in previous studies and scales to be indicative of suicide potential.

Zung (1974) gathered validating data from 275 psychiatric patients, who were divided into four groups on their reports of suicidal behaviour; no suicidal behaviour, current ruminators, current threatners, and past or

Table 8; Naval Recruit Suicide Prediction Scale

(Hoiberg and Garfein, 1976)

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1. Has nervousness ever made you miss school,work or fun?

2. Does being in a large group of people make you feel upset?

3. Do you feel you will have trouble making good in the service?

4. Have you ever been so nervous that you had to stay home for a rest?

5. Does it take you a long time to "cool off" after you have been angry?

6. Do you often have trouble getting to sleep?

7. Are you often bothered by nightmares or frightening dreams?

8. Do you enjoy the challenge of a tough job?(reversed)

9. Do you expect to have trouble learning to take orders?

10. Do you think you've gotten a "raw deal" from life?

11. Do you frequently feel you just don't care what happens to you?

12. Are you often cross and irritable for no particular reason?

13. Is there anything wrong with your memory?

14. Do you find it hard to keep your mind on a task or job?

15. Are you bothered by nervousness?

16. Do you awake frequently during the night?

17. Do you tend to go all to pieces when you are rushed?

18. Do you often need to get completely away from people?

19. Can you usually take criticism without being hurt?(reversed)

20. Have you ever been bothered by cold sweats?

21. Do you worry over trifles?

current attempters. Results showed there to be no significant difference between the four groups on the social demographic part of the scale. When the patients were divided into no suicidal behaviour and suicidal behaviour groups (which included ruminators, threatners and attempters) only the past medical history from the demographic section of the scale significantly differentiated between the two groups.

On the other hand, the clinical section of the Index of Potential Suicide significantly distinguished between the four groups, with the no suicidal behaviour group scoring the lowest and suicide attempters the highest. All factors in the clinical scale except alcoholism distinguished between the suicidal and non-suicidal groups at significant levels.

While the Zung Index of Potential Suicide is promising, it has prompted only two validation studies (Moore, Judd, Zung and Alexander, 1979; Zung and Moore, 1976) neither of which test predictive validity. One of the aims of this research is to evaluate the effectiveness of Zung's clincial scale in predicting further suicidal behaviour in attempted suicide patients.

Like scales predicting suicidal death, tests for predicting further attempts have mostly taken a demographic approach. Factors common in these scales include previous suicide attempt, previous psychiatric treatment, and living alone. These scales also suffer from the fact that few validation studies have been undertaken. The Zung IPS has the advantage of using a clinical approach and having some research on the scale available. The use of the IPS in this research offers not only the opportunity to investigate the predictive validity of the scale but also

investigate the clinical factors the scale is based on.

5.4 Innovative approaches

Two of the most innovative recent procedures in suicide prediction scales are not easily classified with previous efforts. Research undertaken by Greist et al (1973, 1974) and also Linehan, Goodstein, Nielsen and George (1980) will no doubt have an impact of future scales.

Griest has developed a comprehensive computer interview that assigns a probability estimation of a patient engaging in suicidal behaviour. The computer branches the patient through the interviews gathering demographic and clinical information. A weight is attached to each piece of information and a total probability estimation for a particular time period (e.g. 48 hours or six months) is made. The weighting system was composed by expert judges but it is hoped to eventually replace these with weightings derived from an actuarial data base.

From research done thus far the computer predictions compare favourably with those of experienced psychiatrists and other mental health professionals. Griest et al (1973, 1974) and Gustafson, Griest, Stauss, Erdman, and Laughren (1977) report a retrospective pilot study of the accuracy of computer predictions with 22 patients. After three months the computer correctly predicted 60% of the attempts compared with a 40% correct rate by clinicians (significant at the .01 level). Moreover the computer predictions were made at a higher confidence level than clinicians, for both attempts and non-attempt predictions than clinicians.

In a more recent study Griest, Gustafson, Erdman, Taves, Klein and Speidel (1980) arranged computer interviews and clinician risk ratings with 63 psychiatric patients. The patients were then followed up at 48 hours, three, nine, and eleven month intervals. Results showed the computer to predict suicide attempts significantly more accurately than clinicians at all follow up intervals. Work has proceeded on the refinement of this program (Gustafson, Tianen and Griest, 1981) and further development is planned.

While most suicide prediction scales have been designed to isolate factors indicative of suicidal behaviour in the lives of respondents, Linehan et al (1980) have presented a novel scale that evaluates the reasons people have to go on living. Linehan et al sought to identify the specific thoughts that would prevent an individual from killing himself. After an initial validation study Linehan et al developed a 48 item Reason for Living Scale. It is composed of six subscales; survival and coping beliefs, fear of suicide, fear of social disapproval, consequences for family, moral objections and child related concerns. Preliminary results on concurrent validity from a sample of 193 Seattle shoppers and a small clinical sample, suggest the Reason for Living Scale has promise in the assessment of suicide potential.

5.5 Summary and proposal

There have been a number of efforts at developing scales for prediction of both suicidal death and further suicidal behaviour in attempted suicides. Most of the recent work has concentrated on developing scales unique to the suicide prediction process rather than using existing psychological

tests. These "task related" scales vary widely in item number, range, and weighting. However amongst the suicidal death prediction scales several common factors appear, reflecting the demographics of the person at risk of committing suicide. Factors such as an older age, male, and a disrupted marital life are frequent. There is also considerable overlap between the clinical factors in suicidal death and futher suicide attempt scales. Common factors are; previous suicidal behaviour, previous psychiatric treatment, depression, alcoholism, and poor health.

Future improvements in suicide prediction scales will result from their development and validation in sub-populations at risk, the use of a wide range of clinical variables including positive "insulation" factors and the incorporation of computer technology.

At present Zung's (1974) Index of Potential Suicide has the advantage of taking a clinical approach. This has benefits for the clinician because the scale's factors are based on the psychological condition of patient before the suicidal behaviour rather than demographic factors worked out over a population. If these factors are found to be predictive they can therefore be used directly to make predictions about individuals. This research tests the ability of the Zung clinical IPS to identify repeaters in a hospital setting.

CHAPTER SIX

SUMMARY AND HYPOTHESES

6.1 Theoretical Model

The present study tests a alternative theoretical model of suicidal behaviour. Its focus is the role of psychological variables in the development of such behaviour. In contrast to earlier research which has concentrated on demographic and "pathological" indicators of suicidal behaviour, this study examines the role of insulating personality attributes (self esteem and social skills) as well as the cognitive variable of hopelessness. While demographic factors have led to a descriptive understanding of self destructive behaviour, the identification of psychological variables will facilitate a firmer theoretical understanding of the nature of suicidal behaviour.

This study uses a follow-up procedure which has the advantage of investigating the influence of variables before an attempt occurs. This procedure is not common in the suicide prediction area since it is difficult and time consuming to gather predictive data in at-risk groups. However without such a design the inferences about causality are extremely difficult.

The study uses a suicide attempt as the main dependent variable. To use suicidal death would require an enormous number of subjects given the infrequent occurence of this behaviour. Suicidal ideation or how frequently the subject thinks of suicide, is also used as a more sensitive measure of suicidal behaviour.

The psychological factors chosen in this study are hypothesised to form positive and negative influences on the behaviour of the suicide attempter. Social skills and self esteem both act to give the attempter more chance of developing effective coping behaviours and thus decreasing the probability they will reattempt. Due to its influence on perception, hopelessness acts negatively by encouraging the belief that the attempters problems are insurmountable and so increasing the likelihood they will engage in further suicidal behaviour.

The finding that attempted suicides are under considerable life event stress before their attempt, and up to two years afterwards, suggests an opportunity to identify personality factors that moderate the relationship between stress and suicidal behaviour. Self esteem is proposed as a factor that may dilute the effects of stressful life events on the individual. It is likely self esteem may firstly protect the attempter's self image from events that question their view of themselves as a worthwhile person, and secondly, promote a positive attitude towards the individual's own ability to face current difficulties.

The fact that suicidal individuals lead socially isolated lives has been noted by a number of researchers. Generally the attempter's social relationships are unsatisfying and a major source of interpersonal friction. Against this backdrop, the suicide attempt can often be seen as a psychopathic form of social communication; A signal to significant others of the attempter's dissatisfaction with the current state of the relationship. At the same time revealing an inability to deal effectively with the interpersonal problems they face.

Those attempters with higher levels of social skills are predicted to be more likely to form satisfactory interpersonal relationships after they are discharged from hospital, and consequently be at a lower risk of making a repeat suicide attempt.

Depression has long been recognised as closely related to suicidal behaviour. This has been confirmed in research on attempters, suicides, and follow-up studies of depressed psychiatric patients. Beck has proposed hopelessness as the cognitive variable that links depression to suicide. He has supported this assertion with research showing it is the variance from hopelessness that explains the relationship between depression and suicidal intent - the strength of suicidal desire. Hopelessness operates on a cognitive level in the perception and interpretation of eviromental events. The individual high in hopelessness sees the future as dark and holding no likelihood of real happiness. This study examines the usefulness of hopelessness as a predictor of suicidal behaviour in a prospective design. It is hypothesised that hopelessness is the variable linking depression to suicidal behaviour and ideation. Further, those attempters with high hopelessness will be more likely to have higher suicidal ideation and engage in a repeat attempt. The cognitive rigidity noted by a number of researchers (e.g Neuringer, 1976) is considered to be an artifact of the depressed person's suicidal condition and is thus hypothesised to be correlated with depression on admission but not related to suicidal ideation or the number of suicide attempts.

Zung (1974) published a predictive instrument composed of clinical factors found to be related to suicidal behaviour in previous research. The

clinical subscales of the Zung Index of Potential Suicide measure depression, anxiety, alcoholism, general health, emotional status, and current suicidal behaviour. Although these factors are mostly outside the theoretical thrust of this thesis, the use of Zung's scale offers an opportunity to compare the predictive power of these previously identified psychological factors with the variables focused on by the thesis. Use of the scale will also provide some validation data on the predictive validity of the IPS for clinicians in the field, and may suggest areas of further research.

The use of psychological variables in a theoretical model of suicidal behaviour has four advantages. Firstly it will lead to a better theoretical understanding of the processes involved in self destructive pathology. Secondly, if these variables are found to be related to the development of suicidal behaviour, they will be able to be directly applied in the clinical situation. This contrasts with risk factors formulated from population base rates which have a restricted use when applied to an individual (Lester, 1974). Thirdly, these psychological constructs have the potential to be developed into an assessment instrument which may be used to assess risk in individual cases. The fourth point is that the factors used here have direct implications for the treatment of suicidal individuals. If these factors are shown to be involved in the development of suicidal behaviour, individually tailored treatment programmes may be designed to build self esteem and social skills or reduce hopelessness - causing a consequent decrease in suicide potential.

6.2 Hypotheses

1. Suicide attempters who have made previous attempts will be characterised by lower levels of self esteem than first attempters.

2. Subjects making a repeat attempt during the six month follow-up will be characterised by lower self esteem than non-repeaters.

3. Self esteem will be negatively related to the degree of suicidal ideation and depression at the six month follow-up.

4. Suicide attempters who have made a previous attempt will be characterised by lower levels of social skill, measured in terms of high social anxiety and low assertion, than first attempters.

5. Subjects making a repeat attempt during the six month follow-up will be charaterised by lower levels of social skill than first attempters.

6. Social skill level will be negatively related to suicidal ideation and depression at the six month follow-up.

7. The positive relationship between depression and the dependent variables of suicidal ideation and the number of previous suicide attempts, will be largely due to variance from hopelessness.

8. Subjects making a repeat attempt during the six month follow-up will be characterised by higher levels of hopelessness.

9. Hopelessness will be positively related to the degree of suicidal ideation and depression at follow-up.

10. Rigidity will be significantly related to depression measured at admission but not related to suicidal ideation measured at admission or at follow-up. Further, rigidity will not be related to the number of previous suicide attempts or further suicidal behaviour over the follow-up.

11. The Zung Index of Potential Suicide will distinguish repeaters at admission and at the follow-up.

CHAPTER SEVEN

METHOD

7.1 Subjects

The subjects were 67 attempted suicide patients interviewed at three New Zealand General Hospitals. The majority of subjects (84%) were admitted for a drug overdose, with 11% injuring themselves by laceration and 5% using other methods. Seventy-nine percent were treated in general hospital wards while 21% needed intensive care for their injuries. For 50% of the subjects this was their first suicide attempt, 24% had made two attempts, and 26% had made three or more.

Seventy-three percent of the subjects were female. The subjects' average age was 27.8 years (standard deviation= 11.4). The subjects were predominately European (93%), with only 7% Maori. Fifty four percent of the subjects were single, 25% were married, and 20% seperated or divorced.

7.2 Procedure

Three North Island hospitals were used as sites for the research. Because of the distances between the hospitals, help was sought from hospital Social Workers in the administering of questionnaires, when the researcher was unavailable.

All subjects completed the questionnaire while still in hospital and within two days of admission for a deliberate self-injury. By this procedure it was hoped to see the patient at about the same time as a clinician would if he was charged with assessing suicidal risk and

assigning follow-up care. It was explained to each subject that the purpose of the research was to study the condition of patients after a suicide attempt. After the subject had completed the questionnaire, demographic details and information about the attempt were obtained from the subject's file.

It was not possible to obtain consequtive admissions of attempted suicide patients for several reasons. Social workers were occasionally unavailable to give the questionnaire within the required time period, limited hospital cooperation made the establishment of a notification procedure after an admission of an attempted suicide patient impossible, changes in hospital staff to those unfamiliar with the research meant some subjects were missed. However, the final sample did not differ from the 1981 official statistics for suicide attempters (Health Department, 1982); as regards age, sex or method of attempt.

All subjects were followed-up after six months to assess the degree of suicidal behaviour since leaving hospital as well as present suicidal ideation and depression. Subjects were not informed of this follow-up part of the study while they were in hospital. It was felt that this would create an impression in the subject that someone at the hospital or university was concerned about, or following their actions. This belief may have affected post-attempt behaviour.

Six months after their attempt the subject was sent a letter marked confidential, and with a clear return address, (Appendix I) explaining the purpose of the study and were asked to complete the follow-up questionnaire. If no reply was received after two weeks subjects were

sent a reminder letter (Appendix J). This was essentially the same as the first with an added introductory paragraph expressing concern a reply had not been received. The overall return rate was 69%.

7.3 Instruments

A: The Patient Questionnaire

The patient questionnaire administered to the subject while in hospital contained nine of psychological scales. These are described and evaluated in terms of their validity below. In order to reduce subject's recognition of individual tests, the following scales were combined and their items presented ina random order; the Hopelessness Scale, the CPI Flexibility Scale, the Social Anxiety and Distress Scale and the Marlowe-Crowne Social Desirability Scale. The remaining scales in the questionnaire preceded these randomised scales and appeared in the order below.

1. The Self-Rating Depression Scale, (Zung, 1965).

Sythesising the results of factor analytical studies of depression, Zung (1965) developed the Self-Rating Depression Scale (SDS) to measure overall depressive affect and its accompanying psychological and physiological symptoms. The scale is self-rated on a five point Likert-type format ranging from "none of the time" to "most of the time". Two of the items measure general affect (e.g. "I feel down hearted and blue"), eight tap physiological symptoms (e.g. "I have trouble sleeping at nights"), two psychomotor depressive symptoms (e.g. "I am restless and can't keep

still") and eight psychological disturbances (e.g. "My mind is as clear as it used to be"). The full scale is presented in Appendix A.

Very little reliability data on the SDS has been published. Zung (1972) gives a split-half reliability of .73 in a sample of 225 psychiatric patients.

The SDS has been widely used with clinical populations and has been found to be significantly correlated with other depression measures including the Beck Depression Inventory, MMPI-D Scale (Schurr, Hoaken and Jarrett, 1976; Seitz, 1970) and the Hamilton Rating Scale for Depression (Biggs, Wylie and Ziegler, 1978; Brown and Zung, 1972). A number of studies have shown the scale able to distinguish significantly between depressed and non-depressed groups, (e.g. Lunghi, 1969; Zung 1965, 1967, 1972). The SDS has also been found to correlate significantly (.69) with physicians global ratings of depression (Biggs et al, 1978), and significantly with psychiatrists recommendation for admission in depressed patients (Birtchnell and Alacron, 1971). An exception to these findings was Carroll, Fielding and Blashki, (1973) who found the SDS did not significantly distinguish between three groups of depressives; inpatients, day hospital patients and patients from general practice.

2. The Index of Potential Suicide (Zung, 1974)

The Index of Potential Suicide (IPS) is a two part instrument designed to assess suicidal risk. The first part of the IPS measures social and demographic factors found in a variety of previous studies to correlate with suicidal behaviour. The second part of the IPS measures clinical

variables related to suicidal behaviour. Only the clinical scale is used in this research.

The IPS clinical scale is a 50 item composite instrument which includes the Zung Self-Rating Depression Scale (20 items), together with five anxiety, two alcoholism, five general health, eleven emotional status, and six suicidal behaviour items. The clinical IPS scale, incuding the SDS is presented in Appendix A. Although the IPS has an interviewer and significant-other rating form, the self-rating form is used here.

Since its publication there have been no published studies on the reliability or predictive validity of the IPS. However studies have tested the ability of the scale to distinguish significantly between existing suicidal and non-suicidal groups. Zung (1974) as well as Zung and Moore (1976) found the clinical scale to significantly discriminate between groups of normals, ruminators, threateners, and attempters. In both these studies all sections of the clinical scale except alcoholism distinguished between attempted suicides and control groups. In a further study Moore, Judd, Zung and Alexander (1979) found the clinical IPS distinguished between Methadone maintenance patients and controls. It also significantly distinguished previous suicide attempters from controls with no suicidal history.

3. The Adult Self Expression Scale (Gay, Hollandsworth and Galassi, 1975)

This assertion scale is a 48 item instrument designed for use in an adult population. The items concern interpersonal situations where the subject is asked how often they make assertive responses. The Adult Self

Expression Scale (ASES) has a five point Likert response format ranging from "never or rarely" to "almost always or always". The test contains such items as "Do you readily express your opinions to others?" and "Do you find it difficult to refuse the requests of others?". The full scale appears in Appendix B.

Test-retest reliability for the ASES has been reported as .81 over two weeks and .91 over five weeks for a community college sample (Gay et al, 1975). For other samples; evening class hobbyists, graduate students, and psychiatric inpatients, test-retest reliability over one week ranged from .81 to .89. (Hollandsworth, Galassi and Gay, 1977).

The ASES has been found to correlate highly with other measures of assertion; -.78 with Gambrill and Richie's Assertion Inventory (items are scored in the opposite direction to the ASES), and .78 to .85 with the Rathus Assertion Schedule (Hollandsworth 1976; Hollandsworth et al, 1977). Significant correlations have been reported with the EPI extraversion scale (Averett and McManis, 1977), positive correlations with the Adjective Check List measure of dominance and negative correlations with ACL abasement (Hollandsworth et al, 1977). The ASES is also correlated with the Social Fear Scale developed by Wolpe, and Lang's Fear Survey Schedule (Hollandsworth, 1976; Hollandsworth, 1979).

The scale has also been validated through behavioural ratings of high and low scorers on a shortened ASES. Bourque and Ladouceur (1979) used a sub-set of 10 items to distinguish 20 high and 20 low ASES scorers. Subjects then role played 10 assertive situations matched to the 10 questions from the ASES. Significant correlations were found between the

total ASES subtest score and ratings on subjects' general assertiveness (.50), assertiveness content (.41), and anxiety in the role playing performance (-.37). The ASES has also beeen shown to be sensitive to treatment conditions for agoraphobia (Emmelkamp, Kuipers, and Eggeraat, 1978). These studies confirm the ASES as a reliable and valid measure of the construct of assertion.

4. The Self Esteem Inventory (Coopersmith, 1967)

The Self Esteem Inventory was developed from an earlier scale published by Rogers and Dymond (1954). Coopersmith's inventory was designed as a 50 item measure of self esteem in children, but a later 25 item version was developed for use with all ages. It is this version, presented in Robinson and Shaver (1973), that is used in the present research.

Coopersmith's scale, shown in Appendix C, consists of simple self descriptive statements such as "I often wish I was someone else" and "I have a low opinion of myself" with the possible responses ng "like me" or "unlike me".

There is very little reliability data on the shorter form of the scale. One study, Edgar and Powell (1974) does report a Cronbach alpha of .77 in a sample of Australian school children for the shorter scale. The full scale has been found to have good reliability in four studies. Taylor and Reitz (1968) found a split half reliability of .90. Coopersmith (1967) reports a test-retest reliability of .88 over five weeks and .70 over three years. While Watkins and Astilla (1980) found a test-retest of .61 over nine months with Philipine high school children. Spatz and Johnson

(1973) found KR-20 coefficients to range from .79 to .81 in samples of fifth, ninth and twelfth grade children. The shorter scale's reliability would be expected to be slightly lower than those reported for the full test but still at an acceptable level.

Support for validity comes from a factor analytic study of the short version by Crandall (1973). He found four clear factors labelled as self-derogation, leadership-popularity, family-parents, and assertiveness-anxiety. Similiar factors are reported by Edgar and Powell (1974) with the longer scale. The short scale has been found to be correlated .60 with the Rosenberg Self Esteem Scale (Crandall, 1973). The longer scale has also been reported to correlate significantly with other measures of self esteem. Taylor and Reitz (1968) report correlation of .45 with the CPI self acceptance scale, and Shoemaker (1980) reports the Coopersmith Self Esteem Inventory correlated .83 with the Hare Self Esteem Scale. Boshier (1968) also found a correlation of .80 between Coopersmith's scale and childrens' liking of their first name. Generally there is not as much reliability and validity data for the shorter form as the more commonly used longer scale. However overall, the research does give a basis to suggest the scale has satisfactory reliability and validity.

5. The Revised UCLA Loneliness Scale (Russell, Peplau and Cutrona, 1980)

The UCLA loneliness scale developed in 1978 was revised two years later to decrease the social desirability of the items, improve discriminant validity and correct the fact that all items were worded in the same direction.

The full UCLA Loneliness Scale is a 20 item instrument, but a brief four item survey version of the scale recommended by the authors is used in the present research. This subscale represents the best four item predictors of a self rated loneliness score and these items appear in Appendix D. A coefficient alpha of .75 is reported with this subscale (Russell et al, 1980).

The full scale has been found to have high internal consistency (alpha .94), and to be significantly negatively correlated with the number of social activities engaged in and positively correlated with the number of hours spent alone (Russell et al, 1980).

6. The Social Avoidance and Distress Scale, (Watson and Friend, 1969).

The Social Avoidance and Distress Scale (SAD) is designed to measure anxiety in social situations and the avoidance of social interaction. The 28 item scale contains questions on a wide number of personal and public social situations. It includes such items as "I often want to get away from people", and "It is easy for me to relax when I'm with strangers". The full scale is presented in Appendix E.

Reliability figures have been reported using college samples. One month test-retest reliability was found to be .68. Homogeniety as measured by the KR-20 index was .94, and by correlating each item with the overall score a mean of .77 was obtained, (Watson and Friend, 1969). These figure indicate the SAD scale has adequate internal consistency and reliability.

A wide variety of studies support the use of the SAD scale as a valid

measure of social anxiety. It has been found to discriminate between high and low frequency daters (Arkowitz, Lichtenstein, McGovern and Hines, 1975), high and low social anxiety groups (Halford and Foddy, 1982), and groups rated on social competence (Glasgow and Arkowitz, 1975).

7. The Hopelessness Scale, (Beck, Weissman, Lester and Trexler, 1974)

This scale was designed to quantify one of the components of Beck's (1967) theory of depression, namely the negative expectancies an individual holds concerning himself and the future. The 20 item scale has a true false format and contains such items as "I have great faith in the future" and "The future seems vague and uncertain to me", (the full scale is presented in Appendix F).

Beck et al (1974) report internal consistency for the hopelessness Scale to be high. With a sample of 294 attempted suicides the KR-20 alpha was .93. All items were significantly correlated with each other, with item total correlations ranging from .39 to .76. KR-20 alphas have also been reported as .86 in a sample of general psychiatric patients, .83 in forensic psychiatric patients, and .63 in undergraduate university students (Durham, 1982).

The scale was also found by Beck et al (1974) to be significantly correlated with clinical ratings of hopelessness and the pessimism item of the Beck Depression Inventory. Factor analysis of the Hopelessness scale extracted three factors; the largest being feelings about the future, the second motivational aspects - feelings about giving up - and the third

anticipations of what the future will be like. Support for the construct validity of the scale has come from a number of studies testing Beck's theory that hopelessness is the key variable linking suicidal intent to depression (see Table 1).

Although there is considerable support for the Hopelessness scale as a valid and reliable measure of perceived expectancies of the future there is some evidence to suggest the Hopelessness Scale may be contaminated by a socially desirable response set. Both Fogg and Gayton (1976), using samples of undergaduates and Linehan and Nielsen (1981),with a sample of shoppers, found the Hopelessness Scale to be significantly correlated with the Edwards Social Desirability Scale. The importance of this relationship in a clinical sample will be determined in this research.

8. The Californian Psychological Inventory Flexibility Scale (Gough, 1975)

The Flexibility Scale from the CPI is a 22 item test designed to identify those flexible in their thinking and social behaviour. Conversely it has been used to measure rigidity and authoritarianism. The scale's items reflect methodical and rigid thinking such as "I like to have a place for everything and everything in its place". All but one of the items are scored in the negative direction. The full scale is shown in Appendix G.

Studies reported by Megaree (1977) show the Flexibility scale to have moderate reliability. Test-retest ranges from .49 with 200 prisoners over four weeks, to .67 using High School students tested again after a year. Split-half reliability is given as .71 in a sample of 500 men and women.

Results from 3,572 High School boys give a KR-21 of .56.

Validity studies on the Flexibility Scale have given mixed results. Gough (1951) found the scale to be significantly negatively correlated with the California F (authoritarian) and E (ethnocentric) Scales. Gough (1975) later reports the Flexibility Scale correlated -.48 with staff ratings of rigidity in 40 graduate students, and -.36 with staff ratings of rigidity in senior medical students. However other research has failed to show that the scale can measure the other end of the dimension, namely flexibility (Garwood, 1964; Helson, 1967). Gough (Megaree, 1977) has suggested that the flexibility trait may be curvilinear and while the scale may identify rigidity and moderate flexibility, high levels of flexibility may indicate instability. Since for this reseach the Flexibility Scale is used to identify rigid thinking this problem is not an issue, and use of the scale is appropriate.

9. The Marlowe-Crowne Social Desirability Scale, (Crowne and Marlowe, 1964).

This inventory was designed to identify individuals who describe themselves in an overly favourable way, endorsing socially desirable items on personality scales and rejecting socially undesirable ones. The test is composed of 33 items that are culturally acceptable but have a low frequency of occurance. The scale was designed to be free of the psychopathological symptoms used in the earlier Edwards (1970) scale. The Marlowe-Crowne scale contains items like: "I can't remember playing sick to get out of something" and "I have never intensely disliked anyone". The full scale appears in Appendix H.

The authors of the scale report a KR-20 alpha of .88 and a test-retest, after a month using 57 College students, also of .88. Later research found the scale to have KR-20's of .82 (Reynolds, 1982) and ranging from .78 to .87 (Strahan and Carrese Gerbasi, 1972) in University samples.

Validity was orginally established by Crowne and Marlowe (1964) through a series of experiments where high social desirability scorers were found to be more socially conforming and more susceptible to suggestion. They also described dull and boring tasks more favourably, and showed a greater delay in reporting taboo words. Correlations between the Marlowe-Crowne Scale and the Edwards Social Desirability Scale have been reported as .56 (Crowne and Marlowe, 1964) and .47 (Reynolds, 1982). A factor analytic study of the Marlowe-Crowne Scale also supports the test's validity. Ramanaiah, Schill, and Leung (1977) found two factors accounted for 68% of the scale variance. These were an attribution factor – attributing desirable characteristics to oneself, and a denial factor - denying undesirable characteristics.

B: The Follow-up Questionnaire

This questionnaire contained the Zung Self-Rating Scale, the Short Revised UCLA Loneliness Scale and a scale to measure suicidal ideation developed by Paykel, Myers, Lindenthal and Tanner (1974). This scale was composed of four questions, self-rated for frequency on a four-point scale from often to never;

Over the past six months have you...

1. Felt life was not worth living.

2. Thought of taking your own life.

3. Wished you were dead.

4. Reached the point where you seriously considered suicide.

The questionnaire finally asked about suicidal behaviour in the past six months;

5. Since completing the questionnaire six moths ago have you made any suicide attempts regardless how serious? Yes/No

   How many?

6. Were you admitted to hospital for any of these attempts? Yes/No

   How many times?

CHAPTER EIGHT

RESULTS

8.1 Overview of the results

The results chapter is divided into two main sections. The first considers the attempter at admission, and the second section, the attempter after the six month follow-up.

There are two main dependent variables at admission. The first is suicidal ideation or the frequency of suicidal thoughts, measured by a three item subscale of the Zung IPS. The second is the number of previous attempts made by the patient. Patients are classified as repeaters at admission if they have made one or more previous attempts.

There are three dependent variables at the follow-up. The first is suicidal ideation measured by Paykel et al's (1974) Suicidal Ideation scale. The second is the patients' level of depression. The third dependent variable is the number of suicide attempts the patient has made since their discharge from hospital six months previously. Patients are classified as repeaters here if they have made at least one further suicide attempt.

The first section initially presents reliability and construct validity information on the patient questionnaire scales. The proposition that the hopelessness scale may be contaminated by a socially desirable response set is then considered jointly with the hypothesis that hopelessness is the variable linking depression to suicidal behaviour.

The rest of the first section investigates the relationship of the independent variables (self esteem, hopelessness, social skills, flexibility and depression) with suicidal behaviour and ideation. The patient questionnaire scales were subjected here to principle component analysis in order to orthogonalize the scales for clear interpretation. To determine the relative contribution of the independent variables, they were entered into a multiple regression equation, predicting suicidal ideation, and also a discriminant analysis, classifying repeaters and first time attempters.

The second section examines the results of the follow-up part of the study. It first discusses the reliability of the follow-up questionnaire scales, then considers through multiple regression, the relationship between the independent variables and the dependent variables of depression and suicidal ideation at follow-up. The effectiveness of the independent variables to predict patients who have made repeat attempts over the six months is investigated through discriminant function analysis.

The next part presents an analysis of the raw scores of repeaters and non-repeaters on the patient questionnaire scales. The final analysis correlates the subscales and total score on the Zung Index of Potential Suicide with suicidal ideation and the number of suicide attempts measured at admision and over the follow-up period, in order to investigate the predictive validity of this scale.

PART I; THE ATTEMPTER AT ADMISSION

8.2 Patient questionnaire reliability and validity

The tests used in the patient questionnaire were first examined for reliability. Cronbach alphas were computed for the nine scales and for a suicidal ideation scale composed of three items from the Zung Clinical IPS. These items were; "I have had recent thoughts about dying", "I have been thinking of ways to kill myself" and "I have said to someone I wanted to kill myself".

The reliability coefficients are presented in Table 9. The table shows all tests except the UCLA Loneliness Scale to have acceptable reliability coefficients. This four item scale has a very low alpha (.10) and analysis based on the Loneliness Scale would be likely to be misleading. The scale was therefore dropped from further analysis.

Intercorrelations were computed for all patient questionnaire scales, except the Zung IPS which is discussed later. Table 10 shows there is a considerable degree of intercorrelation between the scales. As expected depression is significantly positively correlated with hopelessness and social anxiety, and negatively correlated with self esteem and assertion. As hypothesised flexibility is negatively correlated with depression (-.32, p<.01). Hopelessness is significantly negatively correlated with assertion, self esteem, and positively correlated with social anxiety. As would be expected social anxiety and assertion share considerable common variance. The strength of the intercorrelations are in line with previous research on the scales and give overall support for the construct validity of the scales used.

Table 9; Alpha Coefficients for Patient Questionnaire Scales

Scale	Number of Items	Cronbach's Alpha
Zung Self-Rating Depression Scale	20	.75
Zung Index of Potential Suicide	50	.87
Zung Suicidal Ideation	3	.79
Adult Self Expression Scale	48	.92
UCLA Loneliness Scale	4	.10
Coopersmith Self Esteem Scale	25	.82
Hopelessness Scale	20	.85
CPI Flexibility Scale	22	.81
M-C Social Desirability Scale	33	.82
Social Anxiety and Distress Scale	28	.88

Table 10; Intercorrelations Among Measures in Patient Questionnaire

---

	1	2	3	4	5	6
1. Depression						
2. Assertion	-.23*					
3. Self Esteem	-.44***	.45***				
4. Hopelessness	.48***	-.34**	-.51***			
5. Social Anxiety	.23*	-.61***	-.34**	.36**		
6. Flexibility	-.32**	-.13	-.09	-.02	-.07	
7. Social Desirability	-.18	.18	.41***	-.34**	-.16	-.21

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* p <.05, ** p <.01, *** p <.001

8.3 Hopelessness, depression and suicidal behaviour

The hypothesis that hopelessness variance explains the correlation between depression and both suicidal behaviour and ideation was tested.   At the same time the assertion that the Hopelessness Scale is contaminated by a socially desirable response set (Linehan and Nielsen, 1982) was also examined. Both these relationships were tested through the use of partial correlation analysis. As can be seen from Table 10, the Hopelessness Scale is significantly correlated with the Zung Self-Rating Depression Scale (r= .48, p<.001) and with the Marlowe-Crowne Social Desirability Scale (r= -.34, p<.01). No significant correlation exists between the depression scale and social desirability (r= -.18).

Correlations were calculated for depression with suicidal ideation

(measured by the three item suicidal ideation subscale from the IPS) and the number of suicide attempts the patient had made. First-order partial correlations were calculated on these measures controlling for hopelessness then for social desirability. This procedure was repeated correlating hopelessness with suicidal ideation and the number of suicide attempts, controlling for depression and social desirability. The results are presented in Table 11. Hopelessness correlated more highly than depression with both the number of suicide attempts and suicidal ideation. Further, hopelessness remained significantly correlated with both suicidal measures when depression is partialled out. When controlling for hopelessness, the correlation between depression and the suicidal measures is non-significant. This supports the hypothesis that hopelessness is the variable explaining the correlation between depression and suicidal behaviour.

Table 11 also shows social desirability has no effect on the hopelessness and depression scales. Partialling out social desirability does not change the strength of the relationship between the Hopelessness Scale and the suicidal measures. Depression is also largely unaffected by social desirability.

8.4 Predicting suicidal ideation at admission

The high degree of collinearity between the scales in the Patient Questionnaire makes interpretation of regression equations difficult and indicates regression coefficients may fluctuate greatly when used in other samples (Darlington, 1968). In order to control this, scales were subjected to principal components analysis with varimax rotation. This

Table 11; Full and Partial Correlations for Suicidal Variables

with Hopelessness and Depression Controlling Social Desirability [1]

	Controlling	Number of Suicide Attempts	Suicidal Ideation
Depression		.24 *	.34 **
	Hopelessness	.19 ns	.06 ns
	Social Desirability	.37 **	.26 *
	Hopelessness Social Desirabilty	.19 ns	.06 ns
Hopelessness		.36 **	.49 ***
	Depression	.29 *	.44 ***
	Social Desirability	.44 ***	.48 ***
	Depression Social Desirabilty	.31 *	.42 ***

* p <.05, ** p <.01, *** p <.001

was to transform the set of scales into a new equivalent set of components uncorrelated with each other. This procedure has the advantage of allowing direct interpretation of beta weights in regression and discriminant analysis. It has been argued (Kerlinger and Pedhazur, 1973; Thorndike, 1982) that the use of such factor scores creates more stable constructs by reducing the error inherent in raw scores. While overall predictive power of the independent variables is likely to be reduced using this method, shrinkage and fluctuation in the predictive variables

1. Appeared as; Petrie, K. & Chamberlain, K. Hopelessness and Social desirability as Moderator variables in predicting suicidal behaviour. Journal of Consulting and Clinical Psychology, 1983, 51, 485-487 (see Appendix K).

when cross-validated in other samples should be minimized. This has been a recurring problem with the validation of suicide prediction indices (Lester, 1974; Pallis et al, 1982).

As there were six patient questionnaire scales used in data analysis, six principal components were specified for this procedure. Table 12 shows each of the six rotated components loads heavily on one of the Patient Questionnaire scales and has low loadings on all the others. Factor scores were calculated during this procedure and used in further analysis.

Since some of the subjects had missing factor scores a criteria was adopted for inclusion in both the multiple regression and the discriminant function analysis. If subjects had more than two missing factor scores they were excluded from the analysis. This resulted in eight subjects being excluded. Subjects with two or less factor scores missing had their missing score replaced by the mean factor score. This cut-off procedure allows for a slightly larger sample size while insuring reasonable stability in the scores.

To test the hypothesis that hopelessness is the variable that best predicts suicidal ideation at admission all factors were entered in a multiple regression analysis with suicidal ideation as the dependent variable. Since the factors are orthogonal all six were entered into the analysis in a single step.

Table 13 presents the results of this analysis, and show the hopelessness factor to be the variable most closely related to suicidal ideation at

Table 12; Varimax Rotated Factor Matrix for Patient Questionnaire Scales

SCALES   FACTORS

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR
HOPELESSNESS	0.001	0.153	0.928 *	0.223	-0.224	-0.123
DEPRESSION	-0.186	0.077	0.221	0.930 *	-0.198	-0.080
ASSERTION	-0.087	-0.315	-0.127	-0.083	0.196	0.912
SOCIAL ANXIETY	-0.051	0.930 *	0.150	0.077	-0.127	-0.296
SELF ESTEEM	-0.065	-0.133	-0.230	-0.204	0.920 *	0.193
FLEXIBILITY	0.983 *	-0.039	0.001	-0.156	-0.053	-0.069

* Indicates highest loading

Table 13; Multiple Regression Equation Predicting Suicidal Ideation

------------------ VARIABLES IN THE EQUATION ------------------

VARIABLE	B	BETA	T
ASSERTION FACTOR	-0.036	-0.010	-0.084
FLEXIBILITY FACTOR	0.203	0.049	0.414
SELF ESTEEM FACTOR	-0.548	-0.144	-1.190
DEPRESSION FACTOR	0.935	0.244	2.029 *
HOPELESSNESS FACTOR	1.622	0.416	3.448 ***
SOCIAL ANXIETY FACTOR	0.160	0.043	0.358
(CONSTANT)	6.155		

* = p <.05

*** = p <.001

MULTIPLE R   0.499
R SQUARE   0.249

ANALYSIS OF VARIANCE

	DF	SUM OF SQUARES	MEAN SQUARE
REGRESSION	6	233.607	38.934
RESIDUAL	52	704.053	13.539

F =   2.876   SIGNIF F = 0.017

admission, thus confirming the hypothesis. Depression is also related to suicidal ideation but at a lower level. While not reaching significance it is worth noting that self esteem also explains a reasonable proportion of the variance. Although flexibility was found to be significantly related to depression, this analysis confirms the hypothesis that flexibility would be unrelated to suicidal ideation.

8.5 Discriminating first attempters and repeaters

The next hypothesis tested was that the patients for whom this admission to hospital was a repeat attempt would have lower self esteem, less social skills and feel greater hopelessness. To test this hypothesis a discriminant function analysis was used to identify the factors that best discriminated between first time and repeat attempters. It should be emphasized that this categorization is retrospective - classifying groups on past behaviour. As such some "error" is expected through misclassifying a number of patients as actual first attempters whereas they will be repeaters being tested at their first attempt.

Variables were selected in the discriminant analysis so as to obtain the smallest Wilks' Lambda. Other methods of inclusion are essentially equivalent when there are only two groups (Rulon and Brooks, 1968). An F value greater than 1 was necessary for entering the function.

Results of the discriminant analysis are shown in Tables 14, 15, and 16. Table 14 shows that four of the six factors significantly discriminated between the two groups; self esteem, hopelessness, depression and social

Table 14; Stepwise Selection of Factors in Discriminant Function

Analysis for Classifying Repeaters and First Attempters at Admission.

STEP	VARIABLE	VARS IN	WILKS' LAMBDA	F TO ENTER	SIG.
1	SELF ESTEEM FACTOR	1	0.938	3.745	0.057
2	HOPELESSNESS FACTOR	2	0.868	4.242	0.019
3	SOCIAL ANXIETY FACTOR	3	0.821	3.981	0.012
4	DEPRESSION FACTOR	4	0.801	3.338	0.016

anxiety. The standardised discriminant function coefficients (Table 15) show self esteem and hopelessness to contribute most to the final function followed by social anxiety and depression. These findings confirm the hypotheses for the relevant factors. Repeaters tested after their attempt are characterised by lower self esteem, greater hopelessness and higher depression levels. Only one of the social skills variables - social anxiety - distinguished between the two groups. Repeaters are more socially anxious than non-repeaters. As expected flexibility did not distinguish between the two groups.

The classification results are presented in Table 16. Overall 71% of the patients were correctly classified using the discriminant function. This represents an improvement over chance of 21%. Seventy-eight percent of the repeaters were correctly classified.

Table 15; Standardised Discriminant Function

Coefficients for the Four Selected Factors

SELF ESTEEM	-0.665
HOPELESSNESS	0.659
SOCIAL ANXIETY	0.547
DEPRESSION	0.350

WILKS LAMDA = 0.802

CHI SQUARED = 12.152, D.F = 4, SIGNIFICANCE= 0.016

GROUP CENTROIDS = -0.464, 0.514

Table 16; Classification Results for the Discriminant Function

ACTUAL GROUP	NO. OF CASES	PREDICTED MEMBERSHIP GROUP 1	GROUP 2
1. FIRST ATTEMPTERS	31	20 (64.5%)	11 (35.5%)
2. REPEATERS	28	6 (21.4%)	22 (78.6%)

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 71.19%

PART II; THE SIX MONTH FOLLOW-UP

Out of the 46 patients responding to the Follow-Up Questionnaire, seventeen (37.4%) reported making at least one further suicide attempt (see Figure 3). This statistic includes one subject who had killed himself during the six months after his discharge from hospital. Just over 17% of the subjects reported a suicide attempt resulting in hospital admission (see Figure 4). This percentage is in line with previous research on the patterns of readmission to hospital for suicide attempters after discharge (see Adam et al, 1983; Bancroft and Marsack, 1977).

The reattempting figures for first time attempters and repeaters are shown in Table 17. The table shows 10 of the 35 first attempters had made a further attempt during the six month follow-up, while seven of the 32 repeaters had made further attempts. However there was a higher rate of non-responding in the repeater group with 41% not replying compared to 23% for the first attempter group. This difference was not significant (Chi squared= 2.46, d.f= 1). Non-respondents also did not differ from respondents on sex (Chi squared= 1.34, d.f=1), method of attempt (Chi squared= 3.8, d.f= 2) or on age (t= .64, d.f=47). There were also no differences between non-respondents and respondents on any of the scales in the Patient Questionnaire. Thus no systematic differences existed between respondents and non-respondents on the variables of interest.

Cronbach alphas were computed for the scales used in the Follow-Up Questionnaire. The Zung Self-Rating Depression Scale had an alpha of .89 and the four item Suicidal Ideation Scale (Paykel et al, 1974), an alpha of .94. These coefficients indicate adequate scale reliability.
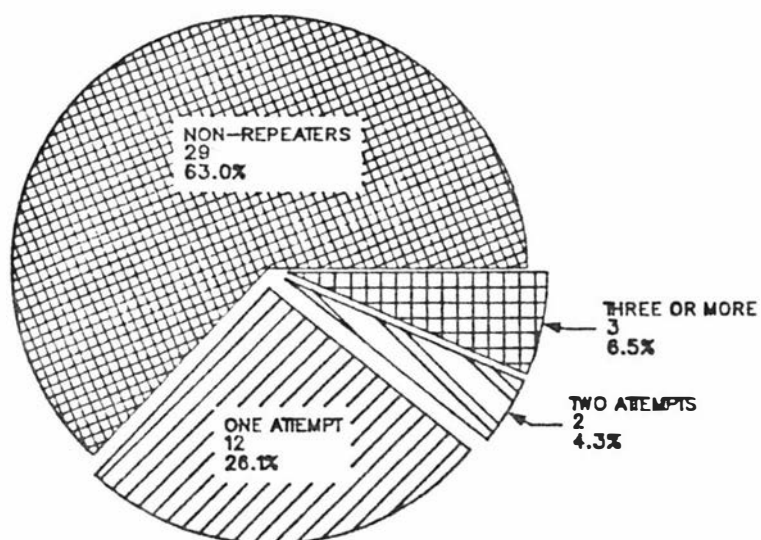
FIGURE 3; NUMBER OF REPORTED FURTHER
ATTEMPTS AFTER SIX MONTH FOLLOW-UP

NON REPEATERS
29
63.0%

HOSPITAL REPEATS
8
17.4%

NO HOSPITAL REPEAT
9
19.6%
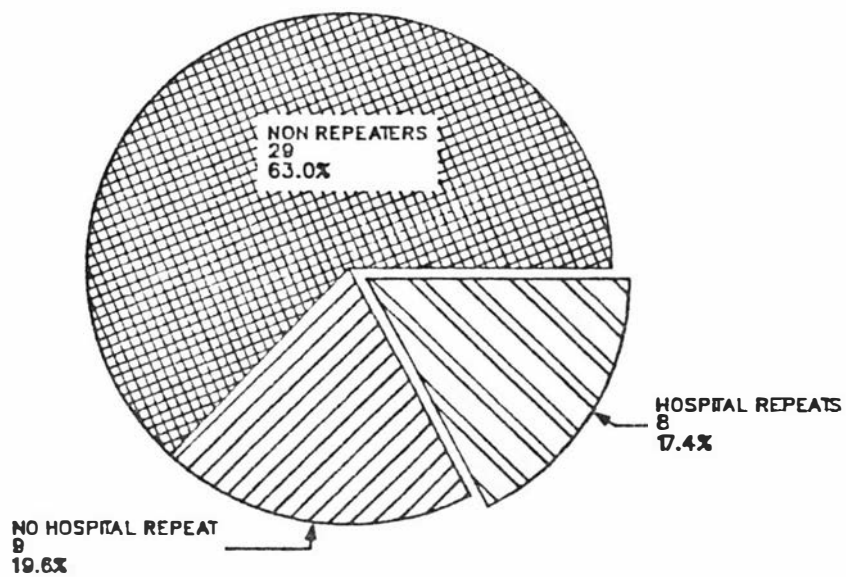
FIGURE4; NUMBER OF REPEATERS   HOSPITALISED
AFTER SIX MONTH FOLLOW—UP

Table 17; Crosstabulation of first and repeat attempters
at admission with non-repeaters and repeaters after six months

At Follow-up

		No repeat	Repeat	Non Response	Total
At Admission	First time attempters	17	10	8	35
	Repeat attempters	12	7	13	32
	Total	29	17	21	67

8.6 Predicting depression level at the six month follow-up

The hypothesis that low self esteem, poor social skills and high
hopelessness at admission would be related to depression level at
follow-up was investigated. The orthogonal factors of all six independent
variables were entered into a multiple regression equation predicting
depression. The results presented in Table 18 show self esteem to be the
only variable that is significantly related to depression. Self esteem
was a better predictor of future depression than both the patient's
previous depression, and hopelessness level. All other factors, apart
from those measuring social skills, do show reasonable beta weights but
are not significantly large enough to reach significance in this sample.

Table 18; Multiple Regression Equation Predicting

Level of Depression at Follow-up

------------------ VARIABLES IN THE EQUATION ------------------

VARIABLE	B	BETA	T
ASSERTION FACTOR	1.530	0.158	1.060
FLEXIBILITY FACTOR	-2.611	-0.219	-1.514
SELF ESTEEM FACTOR	-4.411	-0.439	-3.124 **
DEPRESSION FACTOR	2.585	0.261	1.866
HOPELESSNESS FACTOR	2.798	0.277	1.966
SOCIAL ANXIETY FACTOR	-0.613	-0.059	-0.414
(CONSTANT)	27.949		

** = p < .01

MULTIPLE R   0.609
R SQUARE   0.371

ANALYSIS OF VARIANCE

	DF	SUM OF SQUARES	MEAN SQUARE
REGRESSION	6	1716.387	286.064
RESIDUAL	33	2903.112	87.973

F = 3.252   SIGNIF F = 0.013

8.7 Predicting suicidal ideation at the six month follow-up

The hypothesis that suicidal ideation at follow-up would be related to low self esteem, poor social skills and high hopelessness at admission was tested next. All six factors were entered into a multiple regression with suicidal ideation at follow-up the dependent variable. The results of this analysis are shown in Table 19. The table shows only two variables significantly predicted suicidal ideation, these were self esteem and assertion. This result confirmed the hypothesis that low self esteem would be related to suicidal ideation at follow-up but did not support the hopelessness and social skills hypotheses. The fact that high assertion is significantly related to suicidal ideation is a suprising result and directly contrary to predictions. Other factors while not significant, do explain some of the predictive variance are low flexibility and low social anxiety.

8.8 Discriminating reattempters after six months.

To test the hypothesis that patients making a repeat suicide attempt during the six month follow-up would be characterised by low self esteem, low levels of social skills and high levels of hopelessness, a discriminant function analysis on repeaters and non-repeaters was performed. Three subjects were excluded from the analysis because they had more than two missing factor scores. This left 43 subjects; 15 who had made a repeat attempt (repeaters) and 28 non-repeaters. The results of the discriminant analysis are shown in Tables 20, 21 and 22.

Table 19; Multiple Regression Equation Predicting

Suicidal Ideation at Follow-up

------------------- VARIABLES IN THE EQUATION ------------------

VARIABLE	B	BETA	T
ASSERTION FACTOR	1.337	0.402	2.659 *
FLEXIBILITY FACTOR	-1.181	-0.278	-1.895
SELF ESTEEM FACTOR	-1.389	-0.388	-2.722 **
DEPRESSION FACTOR	-0.175	-0.049	-0.350
HOPELESSNESS FACTOR	0.570	0.158	1.109
SOCIAL ANXIETY FACTOR	-0.788	-0.213	-1.471
(CONSTANT)	8.440		

----

* = $p < .05$, ** = $p < .01$

MULTIPLE R	0.596
R SQUARE	0.356

ANALYSIS OF VARIANCE

	DF	SUM OF SQUARES	MEAN SQUARE
REGRESSION	6	209.131	34.855
RESIDUAL	33	378.768	11.477

F =   3.036   SIGNIF F = 0.017

Table 20; Stepwise Selection of Factors in Discriminant Function

Analysis for Classifying Repeaters and Non Repeaters at Follow-Up.

STEP	VARIABLE	VARS IN	WILKS' LAMBDA	F TO ENTER	SIG.
1	SELF ESTEEM FACTOR	1	0.8476	7.3696	0.0097
2	HOPELESSNESS FACTOR	2	0.8178	4.4552	0.0179

Table 21; Standardised Discriminant Function

Coefficients for the Two Selected Factors

SELF ESTEEM	-0.963
HOPELESSNESS	0.444

WILKS LAMDA = 0.818

CHI SQUARED = 8.044, D.F = 2, SIGNIFICANCE = 0.018

GROUP CENTROIDS = -0.627, 0.337

Table 20 shows that only two variable, self esteem and assertion, significantly discriminated between repeaters and non-repeaters at follow-up. The discriminant function coefficients in Table 21 show repeaters to be characterised by lower self esteem and greater hopelessness at initial admission. Social skills however did not discriminate between the two groups.

The results of classifying the groups from this discriminant function are shown in Table 22. The fact that there are unequal numbers in each group gives considerable opportunity to vary the cut-off point between higher and lower values to best identify either group. This results in a corresponding decrease in the "true" positives for the other group. Thus the first part of Table 22, with the prior probability of assigning cases to each group set at .5, the function correctly identifies 11 of the 15 repeaters and 19 of the 28 non-repeaters. The second part of Table 22 shows by moving the cut-off point so the prior probability is proportional to the number of cases in each group, 28 non-repeaters can be identified at the cost of identifying only six repeaters. Determination of the most efficient cut-off point for a particular institution would depend on the number of high risk cases that can be effectively be given special treatment. The more resources available the lower the cut-off point can be set using this discriminant function.

A comparison was then undertaken between the predictive accuracy possible from these two psychological variables (self esteem and hopelessness) in identifying repeaters, and demographic factors found to be indicative of suicidal behaviour in previous studies. The variables of age, sex, method of most recent attempt, number of previous attempts, marital status, together with suicidal ideation at admission, were entered into a discriminant function analysis classifying repeaters and non-repeaters at follow-up. However none of these variables' F values were sufficiently high enough for inclusion into the function. This indicates that the use of psychological variables offers considerable advantage over previously identified demographic factors in identifying repeaters.

Table 22; Classification Results for the Discriminant Function

	NO. OF	PREDICTED	MEMBERSHIP
ACTUAL GROUP	CASES	GROUP 1	GROUP 2

PRIOR PROB. (REPEAT ATTEMPT)=.5

----

1. NON-REPEATERS	28	19	9
		(67.9%)	(32.1%)
2. REPEATERS	15	4	11
		(26.7%)	(73.3%)

PIOR PROB. =.349

----

1. NON-REPEATERS	28	24	4
		(85.7%)	(14.3%)
2. REPEATERS	15	9	6
		(40.0%)	(60.0%)

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 68.77%

8.9 Raw scores of repeaters and non-repeaters

While factor scores are invaluable for obtaining a theoretical understanding of the factors involved in suicidal behaviour. Clinicians will also be interested in the raw scores of attempters on the psychological scales used and the distribution of repeaters and non-repeaters.

Table 23 shows patients for whom their admission to hospital was a repeat

attempt are characterised by lower self esteem and higher levels of hopelessness and depression. They also have significantly higher levels (one tailed, t-test) of social anxiety indicating they are uncomfortable in social situations. At the six month follow-up only self esteem significantly distinguishes the repeaters from non-repeaters.

8.10 The validity of the Zung Index of Potential Suicide

The Zung IPS was evaluated as an instrument to predict further suicidal behaviour and ideation. The sub-scales and total IPS scale were first examined for reliability and the Cronbach Alphas are shown in Table 24. Three of the sub-scales have moderate reliability coefficients. The Alcoholic and Suicidal Behaviour scales are relatively low, while the General Health alpha is only .38.

The concurrent and predictive validity of the IPS and it's subscales was determined by correlating the subscales with suicidal ideation and behaviour at admission and at follow-up. The results are presented in Table 25. Only two subscales, Depression and Emotional Status were significantly correlated with the number of previous suicide attempts and suicidal ideation at admission. No subscale was correlated with both suicidal ideation and the number of further suicide attempts at the six month follow-up. The most promising subscale here was again the Emotional Status subscale which outperformed the total IPS scale.

The total Zung IPS scale, while being significantly correlated with ideation and the number of attempts at admission, did not show any predictive power when applied to future suicidal behaviour or ideation.

Table 23; Raw Scores of Repeaters and Non-Repeaters

at Admission and Six Month Follow-up

| | At Admission (n=67) | | | | At Follow-up (n=46) | | | |
| | First Attempters | | Repeaters | | Non Repeaters | | Repeaters | |
	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D
Social Anxiety	39.55	7.71	43.07 *	7.57	40.64	8.16	41.20	6.?
Depression	38.32	9.82	42.43 *	9.48	38.59	11.12	42.19	10.?
Hopelessness	10.47	4.53	13.68 **	3.40	10.96	4.59	12.93	4.?
Assertion	140.76	21.07	135.90	23.60	142.93	23.53	138.76	18.?
Flexibility	30.81	3.38	29.86	4.87	29.96	3.52	31	4.?
Self Esteem	35.53	5.07	32.52 **	4.07	35.67	4.63	31.53**	4.?
Zung IPS	102.94	21.84	86.86 **	26.72	94.47	32.19	88.48	25.?

* p < .05, ** p < .01

Table 24; Cronbach Alpha Reliability Coefficients

for the Zung Index of Potential Suicide Subscales

Subscale	Number of Items	Cronbach's Alpha
Depression	20	.75
Anxiety	5	.69
Alcoholism	2	.55
General Health	5	.38
Emotional Status	11	.70
Suicide Behaviour	7	.59
TOTAL ZUNG IPS	50	.84

by testing the IPS mean scores of repeaters and non-repeaters at admission and follow-up. While the mean Zung IPS for repeaters was significantly higher at admission (t=-2.68, d.f=65, p=<.01, one tailed t-test), Table 31 shows there was no significant difference at follow-up. (t=.69, d.f=44).

Since the Emotional Status subscale had the highest correlations with suicidal behaviour and ideation, the eleven subscale items were correlated with the dependent variables in a seperate analysis. This was to identify the most predictive items. The results are shown in Table 26.

Items two, three and seven measure a general hopelessness. These items are significantly related to the number of previous attempts, and (two of the items) to suicidal ideation at admission. This lends further support to Beck's view of hopelessness as the key variable in suicidal thinking.

Table 25; Pearson Correlations Between the Zung Index of Potential
Suicide and Measures of Suicidal Ideation and Behaviour

Subscale	At Admission (n=67)		At Follow-Up (n=46)	
	Suicidal Ideation	Number of Attempts	Suicidal Ideation	Further Attempts
Depression	.34 **	.24 *	-.01	.09
Anxiety	.29 **	.09	.03	-.05
Alcoholism	.05	-.05	.21	-.11
General Health	.09	.15	.07	.19
Emotional Status	.42 ***	.32 **	.15	.27 *
Suicidal Behaviour	a	a	.04	.00
TOTAL ZUNG IPS	.50 ***	.32**	-.01	.08

* p < .05, ** p < .01, *** p < .001

a) Computation of these whole-part correlations would give spurious
results.

The other main source of predictive variance come from items concerning
self blame and punishment. The patient engaging in further suicidal
behaviour seems to exhibit strong guilt feelings together with the idea
they should be punished for their wrongdoings. This may be an area for
further investigation.

Table 26; Pearson Correlations Between the Emotional Status

Items of the Zung IPS and Suicidal Ideation and Behaviour

Items	At Admission (n=67)		At Follow-Up (n=4	
	Suicidal Ideation	Number of Attempts	Suicidal Ideation	Further Attempt
1. I feel someone cares and understands me	-.03	.13	.35 **	.14
2. I feel there is no way out of my situation	.47 ***	.20 *	-.16	-.01
3. I feel that in time things are going to get better	.02	.26 *	-.03	.16
4. I blame myself for everything that goes wrong	.29 **	.17	-.02	.21
5. I have guilty feelings about my past	.41 ***	.15	.27 *	.27 *
6. I feel I deserved to be punished	.48 ***	.35 ***	.02	.33 *
7. When things seem to be at their end, I feel there is someone I can turn to	.19 *	.26 *	.14	.04
8. I have fits of anger and loose my temper	.00	.06	.03	.00
9. I get into physical fights	.10	-.06	.31 *	.10
10. I take chances when driving a car	.12	.01	.02	.10
11. I feel there is someone who depends on me	.00	-.03	-.03	.18

* p < .05, ** p < .01, *** p < .001

8.11 Summary

The results confirm the prediction that low self esteem and high levels of hopelessness are important variables in the development of suicidal behaviour. Both these variables significantly distinguished repeaters from first time attempters at admission and those patients making a repeat attempt in a six month follow-up period. This discrimination was far more accurate than one possible using demographic factors. Hopelessness was significantly related to suicidal ideation on admission while self esteem was related to both suicidal ideation and depression at follow-up.

The hypothesis that poor social skills would be correlated with further suicidal behaviour was not supported by the results. Although repeaters at admission were more socially anxious than first attempters, a poor social skill level did not predict further depression, suicidal ideation or attempting.

The relationship between depression and the variables of suicidal ideation and the number of suicide attempts was largely explained by hopelessness. When the variance from hopelessness was partialled out the correlation between depression and these suicidal measures dropped to non-significant levels. Further, the Beck Hopelessness Scale was unaffected by the socially desirable response set found in a previous non-clinical study to influence the scale.

As hypothesised, rigidity was significantly related to depression at admission but not to suicidal behaviour or ideation at admission or

follow-up.

The Zung IPS, while significantly related to suicidal ideation and the number of suicide attempts on admission, was a very poor predictor of future attempting and ideation. Only one subscale, Emotional Status, proved to be significantly correlated with future suicidal behaviour. The predictive behaviour in this subscale was mainly due to items measuring hopelessness and self blame or self punishment.

CHAPTER NINE

DISCUSSION

This final chapter examines the implications of the results for a theoretical understanding of suicidal behaviour. Since 1960 the number of attempted suicide cases admitted to New Zealand hospitals has increased dramatically. Unfortunately this increase has not been matched by a consequent rise in knowledge about the psychological determinants of suicidal behaviour. The current high level of attempting and reattempting bears testimony to our rudimentary understanding of this dangerous behaviour. The meaning of the results for assessment of hospitalized attempters and the identification of areas for future research are also discussed here.

9.1 Theoretical implications

A major finding of this research is the identification of low self esteem and high hopelessness as important contributing factors to suicidal behaviour. The fact that hopelessness was the variable most closely related to suicidal ideation and the number of suicide attempts at admission but dropped to secondary importance at follow-up, suggests hopelessness has a more immediate and direct relationship with suicidal behaviour than self esteem. This would be expected intuitively and also predicted by Beck's theory of suicide. Beck (1963) noted in depressed suicidal patients that "suicidal preoccupations...seemed related to the patients conceptualisation of his situation as untenable or hopeless. He believed he could not tolerate a continuation of his suffering and he could see no solution

to his problem...The suicidal patient generally stated that they regarded suicide as the only possible solution for their `desperate' or `hopeless' situation" (p. 325). Later work by Beck and others has found hopelessness to be significantly related to the strength of the suicidal desire, labelled suicidal intent (see Beck et al, 1975). Although this relationship has been found in a wide variety of clinical populations, none of these studies have used a prospective design to examine how well hopelessness predicts suicidal ideation or suicidal behaviour itself. The present research has extended the role of hopelessness, found in previous studies to be related to suicidal intent, to also predict suicidal behaviour. While depression has been associated with suicidal behaviour in many studies it now seems that hopelessness is the variable that moderates this relationship. The likelihood of severely depressed individuals attempting suicide will be more related to their feelings of hopelessness than their general depressed affect.

Past studies have found suicidal ideation in general population samples to be related to an individual's depression level (Goldberg, 1981; Paykel et al, 1974; Vandivort and Locke, 1979). The present results suggest however that suicidal ideation is more directly related to the respondent's degree of hopelessness rather than their depression.

While hopelessness is a more immediate or short-term factor in suicidal behaviour, self esteem seems to be related to how the suicide attempter deals with difficulties after leaving hospital. Self esteem does not significantly correlate with suicidal ideation on admission

but it does significantly distinguish repeaters at both admission and follow-up. It also predicts suicidal ideation at six months. Both of these facts suggest the impact of self esteem is during the months after the attempt.

The exact mechanisms that insulate attempters with high self esteem against further attempts and suicidal thoughts are largely unknown. It is possible that high self esteem may protect the attempter's self image from situations and stress that lead to a questioning of their self worth. Self esteem may also encourage a more positive attitude towards their ability to face their problems.

Lewinsohn's behavioural theory of depression has proposed that depressed individuals often lack the social skills necessary to interact in rewarding ways with others. Previous research by Lewinsohn and his collegues has shown depressed individuals to emit a lower rate of interpersonal behaviours and reinforcement to others. As well, their timing of social responses has been found to be deviant from normal subjects (Lewinsohn, 1974; Libet and Lewinsohn, 1973).

Based on Lewinsohn's theory, one would expect that those attempted suicide patients with a lower level of social skill would be at greater risk of developing future depression. This however was not supported by the present research. Low levels of social skill, as measured in terms of high social anxiety and low assertion, were not related either to depression or suicidal behaviour at the six month follow-up.

While this finding does not support Lewinsohn's view of social skills in the etiology of depression, a number of points should be kept in mind. Firstly, it is possible that the specific variables of social anxiety and assertion do not tap the particular social skill components that bring the attempter into interpersonal difficulties with others. Secondly, the influence of social skills may be over a longer period than the six month follow-up. A third possibility is that the range of attempters' scores was not large enough to make prediction possible. While these possibilities must be excluded before any definative statement can be made, the results of this research imply that as indicators of potential suicidal behaviour, social skills do not appear to hold much promise.

A number of previous studies has found suicidal individuals characterised by rigid thinking (see Clum et al, 1979; Neuringer, 1976). It has been proposed that attempters, unable to conceive of alternative solutions to their difficulties and ways of interacting with others, are locked into seeing suicidal behaviour as the only way out of a desperate situation.

Previous research in this area seems to have erred through not controlling for the level of depression in the experimental subjects. Neuringer (1964) for example, while controlling for socio-economic status, age, education and intelligence between groups of suicidal, psychosomatic and normal hospitalized patients, failed to account for the subjects' level of depression. This left open the possibility that the attempter's depressed state may have influenced the characteristic cognitive rigidity found in such studies.

This rigid characteristic appears from the present research to be more associated with the depressed state of the attempter rather than a characteristic of suicidal individuals per se. While rigid thinking on admission was related to depression, it did not significantly predict suicidal ideation or the number of attempts.

Although the "rigidity hypothesis" may have developed as an artifact of the suicidal individual's depressed condition, the cognitive approach to suicidal behaviour is promising. The fact that a person's conceptualisation of the future (hopelessness) is directly related to suicide potential suggests further investigation of the suicidal individual's cognitive structure and processes will give a clearer basis for predicting suicidal behaviour.

What then are the implications for a theoretical understanding of suicidal behaviour? At a basic level the fact that psychological variables can predict suicidal ideation and the number of attempts suggest these variables can be refined and built on to reach a deeper understanding of self destructive behaviour. The results suggest that the person's view of themself may be fundemental to the development of suicidal behaviour. The fact that they see themselves as a worthwhile and valued person clearly has an influence on how they interpret, and are affected by, stressful and disturbing environmental events. The more a person feels that incidents or relationships do not threaten their self image the stronger will be their buffer against depression as well as suicidal thoughts and actions.

An intermediary factor between depression and suicidal behaviour is

hopelessness. The individual's view of the future as a dark and threatening place is more related to their choice of suicidal behaviour than their depressed condition. Hopelessness appears more directly and temporally linked to suicidal behaviour than self esteem. However both these factors clearly play important roles and together cognitive variables seem central to the development of suicidal behaviour.

9.2 Limitations

There are a number of factors that may limit the results and conclusions of this study. The first point to note is that the sample may not be representative of all suicide attempters. The fact that subjects reached hospital, and more importantly, were admitted, suggests they are in the more serious range of suicide attempting behaviour. While this does not effect the generalization of the results to attempters admitted to hospital, it does affect broadening the conclusions to all attempters.

The second limitation is the number of subjects. A larger sample size would have enabled a finer analysis of the relationship between scale components and individual items with the dependent variables. It was initially hoped to obtain a larger sample than 67. However, difficulties caused by a lower rate of attempting in the hospitals surveyed and limited cooperation in some circumstances led to a restricted sample, even though the data collection period was extended from 12 to 16 months.

A third limitation is the use of a mail questionnaire for the follow-up part of the study. The drawbacks of this procedure stem from the lack of control over the completion of the questionnaire and greater opportunity for misleading responses to be given. Personal follow-up interviews were initially considered but viewed as impractical because subjects were spread over large distances and had often changed addresses. The limited research budget ruled out widespread interviews. The fact that the number of patients reporting readmission to hospital was in line with previous research gives some support for the veracity of the responses. Also, none of the returned questionnaires were incomplete or randomly answered. Many had letters accompanying the questionnaire expressing the hope their responses would help people who may also attempt suicide.

A further limitation that should be kept in mind is that for most subjects, admission to hospital is a traumatic event. The stomach washout, medical interviews and the effect an attempt may have on friends or on family, all may act to cause a reaction in the subject that could be reflected in some of the psychological measures. This means that testing the patient within two days of their admission may not be an ideal time for assessing psychological constructs. Since most patients are discharged soon after the second day in hospital the trade-off here would be between more stable measurement and the loss of subjects. In spite of these possible limitations it is felt that the results support and extend previous findings, and provide some promising indications for future research.

9.3 Implications for assessment of attempted suicides

The results have several implications for the assessment of hospitalized attempted suicide patients. Firstly, it is clear that the use of relevant psychological factors will improve the prediction of further suicidal behaviour beyond the limits possible through a purely demographic approach. Demographic factors used in this study did not significantly discriminate between repeaters and non-repeaters. The use of psychological constructs further allows risk to vary over time, with the fluctuation of these constructs, whereas prediction of demographic factors such as age, sex, marital status is relatively static. This property improves the position of the clinician faced with assessing risk in an individual case. However, it is important to realise that the number of patients labelled as high risk by the clinician may ultimately be determined by the resources available in his or her institution to deal with such patients.

From the results it is clear that a distinction between long and short term risk is appropriate. While short term risk may be thought of over a period of days, long-term risk involves prediction over a number of weeks. Different variables are important in prediction over these two periods.

Hopelessness clearly plays an important role in short-term risk. It is significantly related to the patients current thoughts about suicide. The results also imply that assessment of depression may be

redundant in the suicidal assessment process. This process would be better served by direct questionning of the patient's view of the future or through use of Beck's Hopelessness Scale. Fears that the Hopelessness Scale may be confounded by a socially desirable response set from research with a sample of shoppers (Linehan and Nielsen, 1981), appear to be groundless. In a clinical sample the scale is unaffected by such a response bias and its continued use as an instrument to asess suicidal risk seems justified.

The results further suggest that any assessment of suicidal risk over a period of months should include an evaluation of the person's level of self esteem, as well as hopelessness. Self esteem as well as being the only variable correlated with depression and suicidal ideation after six months, was also about twice as important as hopelessness in predicting further suicide attempts.

While the Zung Index of Potential Suicide has been found to discriminate between groups of attempters and controls in previous studies, the present research has shown the scale to have very little predictive power. Classification of patients as high suicidal risk on the basis of this scale would be misleading. Many of the sub-scales have low reliability and only one showed any predictive accuracy. As well as demonstrating poor predictive validity, the results also question, in a more general sense, the relationship between the factors chosen by Zung (e.g alcoholism, general health) and suicidal behaviour.

The improvement possible through use of psychological predictors

underlines the importance of using a systematic procedure to consider relevant variables and rationally combining them. Recent work on the processes involved in the assignment of risk show that individuals generally use heuristics that lead to systematic errors and overconfidence in predictions in most assignments of risk (Slovic, Fishoff, and Lichtenstein, 1982). By systemizing the assignment of suicidal risk so that relevant psychological factors are given full weight, the clinician will be less influenced by biases and can expect improvement in the overall accuracy of his or her predictions.

9.4 Implications for further research

The possible selective bias of this sample towards the more serious range of attempting, means cross-validation of the findings is necessary. It is important to retest the psychological factors found to be involved in suicidal behaviour here, and also to identify further psychological determinants, so overall prediction may be improved.

As well as the obvious scope for testing the role of other psychological factors in suicidal behaviour, future work should investigate what components of self esteem or hopelessness, are the most active in the development of suicidal behaviour. Beck et al (1974) found through factor analysis that the Hopelessness Scale tapped three factors. The first was feelings about the future - an affective component. The second was a loss of motivation to face the future. The third was ideas about what the future would be like. It would be of great interest to examine whether any of these factors has

a more intimate relationship with suicidal behaviour. Likewise, with the broad concept of self esteem, identification of the components most crucial in the development of suicidal behaviour would be a considerable theoretical contribution. The analysis of the predictive validity of the Zung IPS suggests that self blame and a feeling of deserving to be punished were significantly correlated with further suicidal behaviour. Whether these items related to overall self esteem or represent a separate factor needs further investigation.

Although the identification of treatments for attempted suicides is essentially outside the the purpose of this research, the results do give some suggestions for further study. The fact that high hopelessness and low self esteem are important variables suggest that therapies operating on these factors may cause a consequent reduction in future suicidal behaviour. This will obviously have to be tested in future research.

Finally, while there is considerable potential for identification of psychological factors preceeding suicidal behaviour, a "person within situation" approach is likely to ultimately lead to a greater understanding of the complexities of this human problem. This approach enables deeper analysis of the interactions between personality characteristics and social conditions such as isolation or unemployment. This suggests, that as well as a clearer theoretical understanding of suicidal behaviour, more powerful predictions could be made.

9.5 Summary and conclusions

The present study followed a group of attempted suicide patients for
six months after their discharge from hospital. The results showed
37% to have made at least one further attempt and 17% to have been
admitted to hospital again for a repeat attempt. Two variables,
hopelessness and self esteem, were found to predict future suicidal
behaviour in this group of attempters. The results suggest that high
hopelessness has a more immediate relationship to suicidal behaviour
and ideation than self esteem. Variance from hopelessness was shown
to largely explain the relationship depression has with suicidal
ideation and behaviour. Self esteem, on the other hand, has a
longer-term influence on suicidal behaviour. It seems to act by
aiding the attempter to face and deal with stress and interpersonal
difficulties once they leave hospital.

The results imply that psychological variables offer considerable
advantage over demographic factors for predicting suicidal behaviour.
When predicting suicidal behaviour there appears to be a division
between long and short-term suicidal risk, with different variables
operating over the two terms.

The challenge for future research is to identify further psychological
factors involved in the choice to engage in self destructive behaviour
and also to better understand the active components of the variables
identified here. An approach that takes account of significant
situational factors in the lives of attempters as well as personality
characteristics seems to offer the best method for understanding this

complex behaviour.

APPENDICES

Appendix A

The Index of Potential Suicide
Zung (1974)

Scale: None of the time, a little of the time, some of the time, a
good part of the time, most or all of the time.

The Self-Rating Depression Scale, Zung 1965

1. I feel down-hearted and blue.

2. Morning is when I feel the best. (reversed)

3. I have crying spells or feel like it.

4. I have trouble sleeping at night.

5. I eat as much as I used to. (reversed)

6. I still enjoy sex. (reversed)

7. I notice that I am losing weight.

8. I have trouble with constipation.

9. My heart beats faster than usual.

10. I get tired for no reason.

11. My mind is as clear as it used to be. (reversed)

12. I find it easy to do the things I used to do. (reversed)

13. I am restless and can't keep still.

14. I feel hopeful about the future. (reversed)

15. I am more irritable than usual.

16. I find it easy to make decisions. (reversed)

17. I feel that I am useful and needed. (reversed)

18. My life is pretty full. (reversed)

19. I feel that others would be better off if I were dead.

20. I still enjoy the things I used to do.

Anxiety

21. I feel more anxious than usual.

22. I feel afraid for no reason at all.

23. I get upset easily or feel panicky.

24. I feel like I'm falling apart and going to pieces.

25. I feel that everything is all right and nothing bad will happen. (reversed)

Alcoholism

26. I take a drink in the morning.

27. People tell me I drink more than I should.

General Health

28. Within the last 3 months I've seen someone professional about my health, or because I've been worried about myself (e. g. , doctor, nurse, minister, lawyer, social worker, counsellor).

29. I have aches and pains and nothing seems to help it.

30. I feel that I'm in as good a shape physically as I've ever been. (reversed)

31. I take sleeping pills on my own.

42. I try to look my best when I go out. (reversed)

Emotional status

32. I feel that someone cares and understands me. (reversed)

33. I feel that there is no way out of my situation.

34. I feel that, in time, things are going to get better. (reversed)

35. I blame myself for everything that goes wrong.

36. I have guilty feelings about my past.

37. I feel that I deserve to be punished.

38. When things seem to be at there end, I feel there is someone I can turn to. (reversed)

39. I have fits of anger and lose my temper.

40. I get into physical fights.

41. I take chances when driving a car.

45. 1 feel there is someone who depends on me. (reversed)

Suicidal behaviour

43. How often do you think other people think about suicide?

44. How often do people who think about suicide actually kill themselves?

46. I've had recent thoughts about dying.

47. I've been thinking of ways to kill myself.

48. I've said to someone that I wanted to kill myself.

49. I tried to do away with myself.
       How?

50. Have you known anybody who committed suicide?
       Relationship to you?

Appendix B

The Adult Self Expression Scale
Gay, Hollandsworth and Galassi (1975)

Scale: Never or rarely, seldom, sometimes, usually, almost always or always.

1. Do you ignore it when someone pushes in front of you in a line? (reversed)

2. Do you find it difficult to ask a friend to do a favour for you?

3. If your boss or supervisor makes what you consider to be an unreasonable request, do you have difficulty in saying no? (reversed)

4. Are you reluctant to speak to an aquaintance of the opposite sex? (reversed)

5. Is it difficult to refuse unreasonable requests from your parents? (reversed)

6. Do you find it difficult to accept compliments from your boss or supervisor? (reversed)

7. Do you express your negative feelings to others when it is appropriate?

8. Do you freely volunteer information or opinions in discussions with people whom you do not know very well?

9. If there was a public figure whom you greatly admired and respected at a large social gathering, would you make an effort to introduce yourself?

10. How often do you openly express justified feelings of anger to your parents?

11. If you have a friend of whom your parents do not approve, do you make an effort to help them get to know one another better?

12. If you were watching a TV programme in which you were very interested and a close relative was disturbing you, would you ask them to be quiet?

13. Do you play an important part in deciding how you and your close friends spend your leisure time together?

14. If you are angry at your spouse/boyfriend or girlfriend, is it difficult for you to tell them? (reversed)

15. If a friend who is supposed to pick you up for an important engagement rings 15 minutes before he/she is supposed to be there

and says that they cannot make it, do you express your annoyance?

16. If you approve of something your parents do, do you express your approval?

17. If in a rush you stop at the supermarket to pick up a few items, would you ask to go before someone in the check-out line?

18. Do you find it difficult to refuse the requests of others? (reversed)

19. If your boss or supervisor expresses opinions with which you strongly disagree, do you venture to state your own point of view?

20. If you have a close friend with whom your spouse, boyfriend or girlfriend constantly criticises, would you inform them that you disagree and tell them of your friends assets?

21. Do you find it difficult to ask favours of others? (reversed)

22. If food which is not to your satisfaction was served at a good restaurant, would you bring it to the waiters attention?

23. Do you tend to drag out your apologies? (reversed)

24. When necessary, do you find it difficult to ask favours of your parents? (reversed)

25. Do you insist that others do their fair share of the work?

26. Do you have difficulty in saying no to salesmen? (reversed)

27. Are you reluctant to speak up in a small group of friends? (reversed)

28. Do you express your anger or annoyance to your boss or supervisor when it is justified?

29. Do you compliment and praise others?

30. Do you have difficulty asking a close friend to do an important favour even though it will cause them some inconvienience? (reversed)

31. If a close friend or relative makes what you consider to be an unreasonable request do you have difficulty in saying no? (reversed)

32. If your boss or supervisor makes a statement that you consider untrue, do you question it aloud?

33. If you find yourself becoming fond of a friend, do you have difficulty expressing these feelings to that person? (reversed)

34. Do you have difficulty exchanging a purchase with which you are dissatisfied?

35. If someone in authority interrupts you in the middle of an important conversation, do you request that the person wait until you have finished?

36. If a person of the opposite sex whom you have been wanting to meet directs attention to you at a party, do you take the initiative in beginning the conversation?

37. Do you hesitate to express resentment to a friend who has unjustifiably criticised you? (reversed)

38. If your parents wanted you to come home for a weekend visit and you had made important plans, would you change your plans?

39. Are you reluctant to speak up in a discussion or debate? (reversed)

40. If a friend whom has borrowed $5.00 from you seems to have forgotten about it, is it difficult for you to remind this person? (reversed)

41. If your boss or supervisor teases you to the point that is no longer fun, do you have difficulty in expressing your displeasure? (reversed)

42. If your spouse, boyfriend or girlfriend is blatantly unfair, do you find it difficult to say something about it to them? (reversed)

43. If a clerk in a store waits on someone who has come in after you when you are in a rush, do you call his attention to the matter?

44. If you lived in a flat and the landlord failed to make certain repairs after it had been brought to his attention, do you call his attention to the matter?

45. Do you find it difficult to ask your boss or supervisor to let you off early? (reversed)

46. Do you find it difficult to verbally express love and affection to your spouse, boyfriend or girlfriend? (reversed)

47. Do you readily express your opinions to others

48. If a friend makes what you consider to be an unreasonable request, are you able to refuse?

Appendix C

The Self Esteem Inventory
Coopersmith (1967)

1. I often wish I was someone else. (Unlike me)

2. I find it very hard to talk in front of a group. (Unlike me)

3. There are lots of things about myself I'd change if I could. (Unlike me)

4. I can make up my mind without too much trouble. (Like me)

5. I'm alot of fun to be with. (Like me)

6. I get upset easily at home. (Unlike me)

7. It takes me a long time to get used to anything new. (Unlike me)

8. I'm popular with people my own age. (Like me)

9. My family expects too much of me. (Unlike me)

10. My family usually considers my feelings. (Like me)

11. I give in very easily. (Unlike me)

12. It's pretty tough to be me. (Unlike me)

13. Things are all mixed up in my life. (Unlike me)

14. Other people usually follow my ideas. (Like me)

15. I have a low opinion of myself. (Unlike me)

16. There are many times when I'd like to leave home. (Unlike me)

17. I often get upset about the work that I do. (Unlike me)

18. I'm not as nice looking as most people. (Unlike me)

19. If I have something to say I usually say it. (Like me)

20. My family understands me. (Unlike me)

21. Most people are better liked than I am. (Unlike me)

22. I usually feel as if my family is pushing me. (Unlike me)

23. I often get discouraged at what I am doing. (Unlike me)

24. Things usually don't bother me. (Like me)

25. I can't be depended on. (Unlike me)

Appendix D

The Revised UCLA Loneliness Scale
Russell et al (1980)

1. I feel in tune with the people around me. (reversed)

2. No one really knows me well.

3. I can find companionship when I want it. (reversed)

4. People are around me but not with me.

Appendix E

The Social Avoidance and Distress Scale
Watson and Friend (1969)

1. I feel relaxed even in unfamiliar social situations. (False)

2. I try to avoid situations that force me to be very sociable. (True)

3. It is easy for me to relax when I am with strangers. (False)

4. I have no particular desire to avoid people. (False)

5. I often find social occasions upsetting. (True)

6. I usually feel calm and comfortable at social occasions. (False)

7. I am usually at ease when talking to someone of the opposite sex. (False)

8. I try to avoid talking to people unless I know them well. (True)

9. If the chance comes to meet new people, I often take it. (False)

10. I often feel nervous or tense in casual get-togethers in which both sexes are present. (True)

11. I am usually nervous with people unless I know them well. (True)

12. I usually feel relaxed when I am with a group of people. (False)

13. I often want to get away from people. (True)

14. I usually feel uncomfortable when I am in a group of people I don't know. (True)

15. I usually feel relaxed when I meet someone for the first time. (False)

16. Being introduced to people makes me tense and nervous. (True)

17. Even though a room is full of strangers I may enter it anyway. (False)

18. I would avoid walking up and joining a large group of people. (True)

19. When my superiors want to talk with me I talk willingly. (True)

20. I often feel on edge when I am with a group of people. (True)

21. I tend to withdraw from people. (True)

22. I don't mind talking to people at parties or social gatherings. (False)

23. I am seldom at ease in a large group of people. (True)

24. I often think up excuses to avoid social engagements. (True)

25. I sometimes take the responsibility for introducing people to each other. (False)

26. I try to avoid formal social engagements. (True)

27. I usually go to whatever social engagements I have. (False)

28. I find it easy to relax with other people. (False)

Appendix F

The Hopelessness Scale
Beck, Weissman, Lester and Trexler (1974)

1. I look forward to the future with hope and enthusiasm. (False)

2. I might as well give up because I can't make things better for myself. (True)

3. When things are going badly, I am helped by knowing they can't stay that way forever. (False)

4. I can't imagine what my life would be like in 10 years. (True)

5. I have enough time to accomplish the things I most want to do. (False)

6. In the future, I expect to succeed in what concerns me most. (False)

7. My future seems dark to me. (True)

8. I expect to get more of the good things in life than the average person. (False)

9. I just don't get the breaks, and there's no reason to believe I will in the future. (True)

10. My past experiences have prepared me well for my future. (False)

11. All I can see ahead of me is unpleasantness rather than pleasantness. (True)

12. I don't expect to get what I really want. (True)

13. When I look ahead to the future, I expect I will be happier than I am now. (False)

14. Things just won't work out the way I want them to. (True)

15. I have great faith in the future. (False)

16. I never get what I want so its foolish to want anything. (True)

17. It is very unlikely I will get any real satisfaction in the future. (True)

18. The future seems vague and uncertain to me. (True)

19. I can look forward to more good times than bad. (False)

20. There's no use trying to get something I want because I probably

won't get it. (True)

Appendix G

The California Psychological Inventory's Flexibility Scale
Gough (1975)

1. I often wish people would be more definite about things.   (False)

2. It is annoying to listen to a lecturer who cannot seem to make up his mind as to what he believes. (False)

3. I find a well ordered mode of life with regular hours is congenial to my temperament. (False)

4. It is hard for me to sympathise with someone who is always doubting and unsure of things. (False)

5. I often start things I never finish. (True)

6. Our thinking would be alot better off if we just forgot about words like "probably", "approximately", and "perhaps". (False)

7. I never make judgements about people until I am sure of the facts. (False)

8. A strong person will always be able to make up his mind even on the most difficult questions. (False)

9. For most questions there is just one right answer once a person is able to get all the facts. (False)

10. I like to have a place for everything and everything in it's place. (False)

11. I don't like to work on a problem unless there is the possibility of coming out with a clear cut, unambiguous answer. (False)

12. It bothers me when something unexpected interrupts my daily routine. (False)

13. Most of the arguments or quarrels I get into are over matters of principle. (False)

14. I am known as a hard and steady worker. (False)

15. I don't like things to be uncertain and unpredictable. (False)

16. Once I have my mind made up I seldom change it. (False)

17. I am stricter about right and wrong than most people. (False)

18. I am in favour of a very strict enforcement of all laws no matter what the consequences. (False)

19. I always see to it that my work is carefully planned and

organised. (False)

20. The trouble with many people is that they don't take things seriously enough. (False)

21. I set I high standard for myself and feel others should do the same. (False)

22. People who seem unsure and uncertain about things make me feel uncomfortable. (False)

Appendix H

The Social Desirability Scale
Crowne and Marlowe (1964)

1. I never hesitate to go out of my way to help someone in trouble. (True)

2. It is sometimes hard for me to go on with my work if I am not encouraged. (False)

3. I have never intensely disliked anyone. (True)

4. On occasions I have had doubts about my ability to succeed in life. (False)

5. I sometimes feel resentful when I don't get my own way. (False)

6. I am always careful about my manner of dress. (True)

7. My table manners at home are as good as when I eat out in a restaurant. (True)

8. If I could get into a movie without paying for it and be sure I was not seen, I would probably do it. (False)

9. On a few occasions, I have given up doing something because I thought too little of my own ability. (False)

10. I like to gossip at times. (False)

11. There have been times when I felt like rebelling against people in authority even though I knew they were right. (False)

12. No matter who I'm talking to, I'm always a good listener. (True)

13. I can remember "playing sick" to get out of something. (False)

14. There have been occasions when I took advantage of someone. (False)

15. I'm always willing to admit it when I make a mistake. (True)

16. I always try to practice what I preach. (True)

17. I don't find it particularly difficult to get along with loud mouthed, obnoxious people. (True)

18. I sometimes try to get even, rather than forgive and forget. (False)

19. When I don't know something I don't at all mind admitting it. (True)

20. I am always courteous, even to people who are disagreeable. (True)

21. At times I have really insisted on having things my own way. (False)

22. There have been occasions when I felt like smashing things. (False)

23. I would never think of letting someone else be punished for my wrongdoings. (True)

24. I never resent being asked to return a favour. (True)

25. I have never been irked when people expressed ideas very different from my own. (True)

26. I never make a long trip without checking the safety of my car. (True)

27. There have been times when I was quite jealous of the good fortune of others. (False)

28. I have almost never felt the urge to tell someone off. (True)

29. I am sometimes irritated by people who ask favours of me. (False)

30. I have never felt I was punished without cause. (True)

31. I sometimes think when people have a misfortune they omly got what they deserved. (False)

32. I have never deliberately said something that hurt someone's feelings. (True)

Massey University

DEPARTMENT OF PSYCHOLOGY

PALMERSTON NORTH, NEW ZEALAND   TELEPHONES, 69-099, 69-089.

In reply please quote:

Dear

A few weeks ago I wrote to you concerning the research I am involved in.   I
have not heard from you and fear my letter has been mislaid.   Below is a copy
of the letter and questionnaire I sent you.   I would be extremely grateful if
you could help me with this research.

After you were admitted to Waikato Hospital on the 8th November, 1981 you were
good enough to complete a research questionnaire about how you were feeling at
the time.   You may remember it as a blue booklet labelled "patient questionnaire".

The research study you participated in while in Waikato Hospital concerned patients
who injure themselves.   I am trying to improve treatment for patients such as
yourself who are admitted to New Zealand hospitals.

Some patients while they are in hospital and after they're discharged need more
attention than others to ensure they are not admitted again in the future.   I
am trying to identify the characteristics of patients who need more attention
so they can be provided with the best possible treatment.

To complete the study I need to know how you have been getting on.   So I would
be very grateful if you could fill out the enclosed questionnaire and mail it
back in the stamped, addressed envelope I have provided.

The information you provide me is completely confidential.   The results of the
study will in no way identify specific individuals.   No information will be
disclosed to the hospital or any other individual.

I would like to thank you very much for helping me with this research.   Once I
have completed the study I will provide you with a summary of my findings.

Should you have any queries regarding the research or questionnaire feel free
to contact me at Palmerston North 69-099, extension 2588, or write C/- above
address.   If you feel you cannot complete the questionnaire could you please
return it unanswered.

Thanks again for your help.

Yours sincerely

K. PETRIE
GRADUATE STUDENT.

Massey University

PALMERSTON NORTH, NEW ZEALAND

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Yours sincerely

K. PETRIE

GRADUATE STUDENT.

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